JUN 15 1920

The

British Medical Journal

The Journal of the British Medical Association.

INCLUDING AN EPITOME OF CURRENT MEDICAL LITERATURE.

WITH SUPPLEMENT.

No. 3100. SATURDAY, MAY 29, 1920. **Price 1/-**

SKIN DISEASES IN GENERAL PRACTICE.

By HALDIN DAVIS, M.B.Oxon., F.R.C.S., Dermatologist to the Royal Free Hospital. Price 17/- net. Illustrated by 7 Coloured Plates and 62 Photos.

". . . The notes on treatment are particularly good."—*British Medical Journal.*

". . . can be confidently recommended to students and physicians."—*London Hospital Gazette*

Published by

HENRY FROWDE & HODDER & STOUGHTON, 17, Warwick Sq., Newgate Street, London, E.C. 4.

Just Published. SECOND EDITION.
Price 10s. 6d. net, postage 6d. extra.

TWILIGHT SLEEP.

By CECIL WEBB-JOHNSON, M.B., Ch.B., Capt. R.A.M.C.(T.F.), late Officer Commanding Station Hospital, Dum Dum; Specialist in Midwifery, 8th (Lucknow) Division. With a Foreword by COMYNS BERKELEY, M.C., M.D., F.R.C.P., Obstetric and Gynæcological Surgeon to Middlesex Hospital.

A carefully considered treatise, the result of years of experience, setting forth the advantages and disadvantages, method of administratoin, details of technique, particulars and results of cases.

BUTTERWORTH & Co., Bell Yard, Temple Bar, (S. S. Bond) London, W.C. 2.

EARLY MEDICAL BOOKS.

Collectors of old books on medicine will always find a selection of them in our catalogues which are sent post free on demand.

DAVIS & ORIOLI, Antiquarian Booksellers, 24, Museum Street, London, W.C. 1.

NOW READY. SECOND EDITION.
Demy 8vo. Pp. viii + 438. With 129 Illustrations. Price 18s. net. Postage 6d.

TEXT-BOOK OF

OPHTHALMIC OPERATIONS.

By HAROLD GRIMSDALE, M.B., F.R.C.S.Eng.; Ophthalmic Surgeon, St. George's Hospital, &c.; and ELMORE BREWERTON, F.R.C.S.Eng., Consulting Ophthalmic Surgeon Metropolitan Hosp. &c.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C. 2.

NOW READY. Demy 8vo.
Pp. viii. + 233. Price 10s. 6d. net. Postage 5d.

TREATMENT OF THE NEUROSES.

By ERNEST JONES, M.D. Lond., M.R.C.P. Lond., President of the Psycho-Analytical Society.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C. 2.

OXFORD MEDICAL PUBLICATIONS

READY SHORTLY.

STUDIES IN NEUROLOGY.

By HENRY HEAD, M.D., F.R.C.P., F.R.S., Physician to the London Hospital.

Crown 4to. 2 vols. 882 pages, with 182 Illustrations. Price £3 3s. net per set.

COMMON INFECTIONS OF THE KIDNEYS.

With the Colon Bacillus and Allied Bacteria.

By FRANK KIDD, M.B., B.C.(Cantab.), F.R.C.S.Eng., Surgeon to London Hospital; Surgeon in Charge of Genito-Urinary Department, London Hospital; Member of the International Society of Urology.

With an additional Chapter on the BACTERIOLOGY OF THE URINE, by Dr. PHILIP PANTON, Clinical Pathologist, London Hospital.

Demy 8vo. Cloth. 336 pages. Illustrated in Colour and Black and White.

HENRY FROWDE & HODDER & STOUGHTON, 17, Warwick Sq., Newgate Street, London, E.C. 4.

JUST PUBLISHED. Crown 8vo, cloth, 336 pp., 26 illustrations. Price 9s. net; postage 6d.

HANDBOOK OF DISEASES OF THE NOSE, THROAT AND EAR.

By WM. SMITH SYME, M.D., F.R.F.P.S.Glas., Extra Academ. Lect. Dis. Nose and Throat, Univ. Glas., Surg. Glas. Nose, Throat and Ear Hosp., etc.

JUST PUBLISHED. 3rd Edition, Crown 8vo, cloth, 440 pp., 81 illustrations. Price 10s. 6d. net; postage 6d.

MANUAL OF HYGIENE

for Students and Nurses.

By JOHN GLAISTER, M.D., D.P.H., F.R.S.E., Professor of Public Health and Forensic Medicine, Univ. of Glasgow, etc., etc.

E. & S. LIVINGSTONE, Medical, Surgical and Scientific Publishers, 17, Teviot Place, Edinburgh.

NOW READY. Crown 8vo. Pp. viii. + 130. With 48 Figures. Price 4s. 6d. net. Postage 3d.

PRACTICAL TROPICAL SANITATION.

By E. P. MINETT, M.D., D.P.H., D.T.M. & H. Major R.A.M.C. (T.F.); Government Medical Officer of Health, British Guiana.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C. 2.

ESSAYS ON THE SURGERY OF THE TEMPORAL BONE.

By Sir CHARLES BALLANCE, K.C.M.G., C.B., M.V.O., M.S., F.R.C.S., Consulting Surgeon to St. Thomas's Hospital, &c. Illustrated by 125 Plates (40 in colour), and 120 Figures.

In 2 volumes. Medium 4to. Price 5 guineas

MACMILLAN & Co., LTD., St. Martin's Street, London, W.C.

NOW READY. Demy 8vo
Pp. xvi + 376. Price 12s. 6d. net. Postage 6d.

A MANUAL OF NEURASTHENIA.

By IVO GEIKIE COBB, M.D., M.R.C.S., Neurologist, Ministry of Pensions; late Assistant to Out-patient Physician, the Middlesex Hospital; formerly Neurologist, Brinnington Section, Second Western General Hospital.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C. 2.

NOW READY. Pp. x. + 409. With 4 Coloured Plates and 26 other Illustrations. Price 15s. net. Postage 6d.

MARINE HYGIENE AND SANITATION.

A Manual for Ships' Surgeons and Port Health Officers. By GILBERT E. BROOKE, M.A. Cantab., L.R.C.P. Edin., D.P.H., F.R.G.S.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London W.C.2.

NOW READY. FOURTH EDITION.
Pp. viii + 408. Price 7s. 6d. net (postage 6d.).

PHYSIOLOGICAL PRINCIPLES IN TREATMENT.

By W. LANGDON BROWN, M.A. M.D., F.R.C.P., Physician with Charge of Out-patients, St. Bartholomew's Hospital.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, London, W.C. 2.

NOTICE.

All Advertisements *re* Vacancies, Assistants, Practices and Partnerships, etc., must in future reach this Office, 429, Strand, W.C. 2, by TUESDAY, to ensure insertion in the current week's issue of the Journal.

B.M.A. EXHIBITION

CAMBRIDGE, June 29, 1920

COX-CAVENDISH

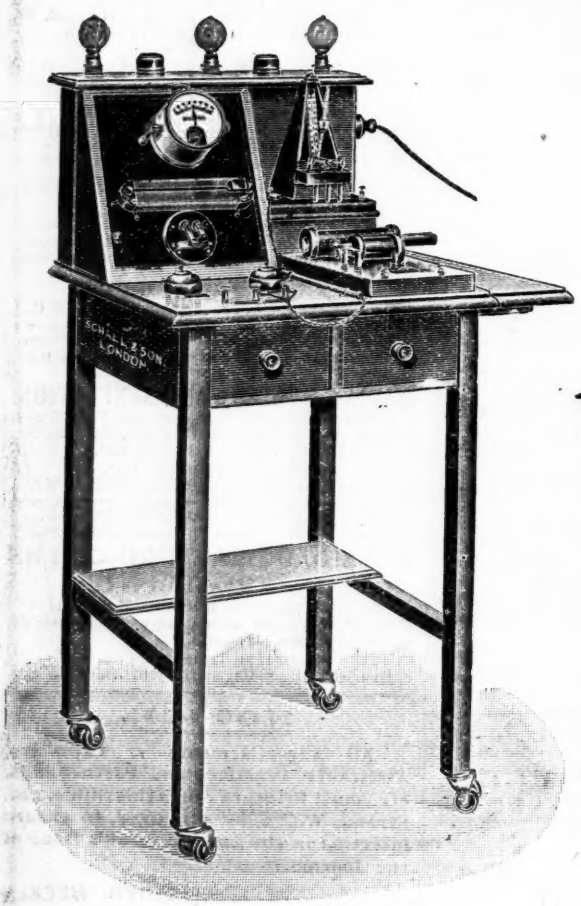
STAND No. 23

X-RAY
Coils
A.C. Interrupters
Couches
Vertical Diagnostic Apparatus
Tube Stands
Intensifying Screens.

ELECTRO-MEDICAL
Schnee Baths
Universal Machines
Bristow Coils
Ionic Medication Apparatus
Radiant Heat Baths
Surgical Lamps.

THE COX-CAVENDISH ELECTRICAL CO., LTD.,

Twyford Abbey Works — Acton Lane, Harlesden.



SCHALL & SON

(W. E. SCHALL, B.Sc. Lond.)

Established 1887.

The oldest established firm devoted solely to Electro-medical and X-ray Apparatus.

BRITISH PROPRIETARY. **BRITISH CAPITAL.**

The ILLUSTRATION SHOWS a

NEW TABLE

FOR

GALVANIC AND FARADIC TREATMENT, MUSCLE TESTING, etc.

Fitted with Galvanic Board, Metronome, and Smart-Bristow Coil.

THE "PANTOSTAT"

(EARTH FREE UNIVERSAL APPARATUS)

AND

ALL OTHER TYPES OF ELECTRO-MEDICAL AND X-RAY APPARATUS.

Manufactured throughout in our Works on the Premises—

71/75, NEW CAVENDISH STREET, LONDON, W. 1.

A large Illustrated Catalogue will be sent free to any Medical Man desiring it.

A Lecture
ON THE
TOXAEMIAS OF PREGNANCY.*

BY
ALECK W. BOURNE, M.B., B.Ch., F.R.C.S.Eng.,
OBSTETRIC SURGEON TO OUT-PATIENTS, ST. MARY'S AND QUEEN CHARLOTTE'S HOSPITALS.

THE exact relation of the mother to her unborn child has been debated since Bar[1] first suggested that both lived for the mutual advantage of each other. He believed that in return for the protection and nourishment of the growing fetus afforded by the mother, the fetus conferred certain nutritional advantages, as shown by an accelerated and intensified metabolism, which make for her improved general health, lasting not only during pregnancy but for long after the birth of the child.

But welcome as such a theory may be to our sentiment, the recent immunological investigations on pregnant women, notably by Leith Murray,[2] afford strong evidence that the fetus *in utero* is not only not a symbiotic partner but rather a foreign element, always a source of potential danger to its host. Such laboratory findings only support common clinical evidence. Though the pregnant woman may be in what she calls good health from the beginning to the end of gestation, yet we know that departures from the normal, sometimes very serious, are only too common, and in general it is undeniable that pregnant women are in a less stable and robust condition than when not carrying.

It is necessary to realize that a state of poisoning exists throughout pregnancy, the toxin produced almost certainly by the growing ovum being absorbed by the maternal circulation. Whether the pregnant woman be well or ill depends not upon the formation and absorption of some unusual poison, but on the capacity or failure on the part of the mother to develop an adequate antipoison, by which she is rendered immune. We may almost say that the ovum is always poisoning its mother, but that in all healthy women, fortunately the majority, the poison is effectively countered by her own immunizing efforts. Where these fail, then can the toxin effect its work unhindered.

The actual source and nature of the toxin of pregnancy have been the reason of years of search and controversy, but it would be unprofitable to-day to devote any time to discussion of all the various theories. I will simply consider the later views in so far as they may help us in understanding more fully the clinical features of the toxaemia of pregnancy and act as a guide to its rational treatment.

The most recent and important work bearing on this question began with Schmorl's discovery that small pieces of syncytial protoplasm could be found in the maternal circulation. The importance of this observation was the definite proof it affords that the foreign fetal protoplasm is conveyed into the maternal circulation. The next question which naturally arose was whether there was any biochemical defence against this invasion, set up by the mother's tissues, comparable with that which the organism makes against invasion by any other foreign protein or bacterial products. The answer was probably given by Abderhalden in 1911, when he demonstrated that the maternal blood during nearly the whole of pregnancy and for ten days afterwards contains a specific ferment capable of digesting placental protein. An enormous amount of experimental work has been done in order to confirm or disprove Abderhalden's claim, and, though there is still some controversy as to the exact meaning of the reaction, the general thesis that the mother's blood contains an anti-enzyme (or other form of antibody) capable of rendering innocuous the foreign proteins from the placenta, is probably true.

Further evidence of a biochemical response on the part of the mother was furnished by Theis and Lockemann,[3] who showed clearly that the maternal serum is sensitized to some bodies in the fetal serum and placenta; by Murray[4] and Fieux and Mauriac,[5] who showed by the complement-fixation reaction a definite antibody for an antigen existing specially in young chorionic villi; and by many others.

A modification of this theory has been put forward by Young,[6] who suggests that the poisoning is due to the absorption of auto-digestion products from a portion of prematurely separated—and presumably necrosing—placenta. But his view is apparently not applicable to all cases of toxaemia, though it goes far to explain the association of eclampsia with accidental haemorrhage.

Finally, I may refer to the view of Tweedy, who believes that the toxins arise from the maternal gut. He argues that in the non-pregnant condition the neutralizing and excretory mechanism of the body is capable of dealing with any noxious products absorbed from the bowel, but that in pregnancy this mechanism can be overwhelmed by the strain due to the excess of such products caused by the metabolism of the fetus *in utero*. His conclusions are based largely on the good results he has observed after starvation and purgation, with thorough lavage of the stomach and colon. But in spite of this observation a general survey of clinical and laboratory knowledge leads irresistibly to the view that the toxin is supplied by the placenta, that ordinarily this toxin is neutralized by maternal antibodies, and that failure to develop these in sufficient quantity causes symptoms of pregnancy toxaemia.

Biochemical Examination.

Turning now from theories, we find that the investigations of laboratory workers have been chiefly in the direction of blood and urine analysis, immunological reactions of the serum, and experimental attempts to isolate a toxin and cause the disease of eclampsia by injecting it into animals. In 1914 Young[6] described experimental toxaemia in animals caused by the injection of placental extracts. In many respects the animals showed symptoms almost indistinguishable from eclampsia, and, still more significant, the *post-mortem* appearances were almost identical with those in patients dead of eclampsia.

The broad results of urine analysis are the finding of albumin, a tendency for the urea output to be diminished, a variable increase in the percentage of nitrogen excreted as ammonia, and the presence of acetone. Further, the amount of urine may be diminished even to complete suppression, and a deposit of renal casts and red blood cells is frequently observed. The general results of urine analysis point to (1) degeneration or necrosis of the specific excretory cells of the kidney, shown by diminished quantity and the presence of albumin and casts; (2) degeneration or necrosis of the liver cells, causing the disturbance of the urea and ammonia coefficients.

Let us consider the hepatic derangement and its consequences first.

We know that in health the amino-acid cleavage products of the digested proteins are absorbed and transported to the liver, where they are largely transformed, the nitrogenous moiety being converted chiefly into urea. In experimental occlusion of the hepatic portal circulation no urea is produced, and if ammonium carbonate or amino-acids are perfused through the living isolated liver, urea is formed. An intermediate product, however, in the formation of urea is ammonia (or ammonium carbonate).

It follows, therefore, that a diminished urea output indicates some degree of hepatic insufficiency; an increased ammonia coefficient in the urine may similarly indicate a stage of hepatic degeneration, short of a complete functional breakdown, but enough to prevent the final stage of urea formation from the ammonia.

One indication, then, of high ammonia and low urea excretion is hepatic degeneration, short of massive necrosis, for in this condition neither ammonia nor urea could be formed. But, as Leith Murray[7] points out, a high ammonia output has a second significance in pregnancy toxaemia, as in other conditions. It may indicate an excessive acid formation in the system, for ammonia production is the body's natural mechanism for the neutralization of that amount of acid formed above the quantity which can be neutralized by the fixed bases (sodium, etc.).

The ammonia of the urine may therefore be divisible into two moieties, the first being an intermediate product of the liver in the course of a conversion of the amino-acid into urea, and the second being that which is purposely produced by the liver, as such, for the work of neutralizing fatty acids due to an abnormal fat metabolism. The first indicates partial hepatic insufficiency in that the final urea

* Delivered to the Hampstead Division of the British Medical Association, April 15th, 1920.

stage is not reached; the second that the patient is in a condition of acidosis—of which more anon.

These different fractions of ammonia may be separated by giving large doses of sodium bicarbonate, for should the body be producing ammonia in order to neutralize excess of acid, it will be relieved of this work if the required alkali be supplied by the mouth, and the ammonia excretion in the urine will fall. In short, the fall of the ammonia, after giving sodium bicarbonate, will be a measure of the acidosis present.

The ammonia remaining, if much above the normal in pregnancy (and it tends ordinarily to be higher in pregnancy), will be a measure of how far the liver is failing to convert its nitrogen to the final stage of urea, and therefore of hepatic degeneration, but not of massive hepatic necrosis.

In spite, however, of the importance of the liver changes, it is obvious that the results of analysis of the urine may depend very greatly on the condition of the kidneys. The liver may be working well, and yet the waste products it has produced may be unable to pass through the damaged renal epithelium. How, therefore, may we obtain an index of the efficiency of the kidney? First, the quantity of urine excreted. If with an ordinary or excessive fluid intake the urine is scanty, it is reasonable to suppose that the kidney is either damaged or that, owing to congestion, the urine is unable to escape. White[8] has shown that the kidney in eclampsia may be so intensely congested that the urine cannot flow down its collecting tubules.

Secondly, the microscopical examination of the deposit will give valuable information. Few or no casts or red blood cells with a fair secretion will indicate only slight kidney changes, while a heavy deposit of casts with much blood will be a sign of more extensive damage.

Unfortunately, the quantity of albumin gives very little information, for we find some cases of serious toxaemia with little albumin, and the contrary condition is often present.

Acetone is found in the urine in some cases. It is derived from a disordered fat metabolism, and indicates an abnormal production of acid in the system. It is commonly seen in starvation and is constantly present in those cases of toxaemia associated with intractable vomiting. In eclampsia it may indicate acidosis, and its presence is of great diagnostic value.

Symptoms in the Prodromal Stage.

During the prodromal stage the patient usually comes to her doctor on account of headache and malaise or oedema of legs and face, less commonly for a failing of sight, and more rarely still for epigastric pain and vomiting.

A headache in late pregnancy is common, not always due to toxaemia; frequently it is a symptom of a low tension debility, often complained of by multiparae. By itself, without changes in the urine, or a high blood pressure, it usually means nothing; but it is a fairly constant warning symptom, which is of value in showing the need for a complete examination of the patient. Similarly, oedema of the legs is often non-specific in its indication, but if combined with oedema of the face and other parts its presence should call for full investigation. Failing or altered vision is an important and dangerous symptom, and warrants an immediate ophthalmoscopic examination of the fundus oculi. Miller[10] states in a recent paper that early eye changes are usually significant of chronic nephritis rather than of pregnancy toxaemia. The differentiation is important for prognosis and for treatment. Of itself, retinitis is one of the more serious symptoms of albuminuria, and if, as has been pointed out, this condition indicates a pre-existing kidney disease rather than an albuminuria of pregnancy origin, then the safest course is to end pregnancy as soon as possible. If treated expectantly such patients may develop uraemia or permanent increased damage to the kidney and lasting changes in the retina.

Epigastric pain and vomiting coming on in late pregnancy, when simple dyspeptic causes can be safely excluded, may be for a few days the only symptoms of impending eclampsia. In fact it is not uncommon for a patient's friends to state that the attack of eclampsia was preceded by a few hours or days by vomiting. As a pregnant woman has probably suffered vomiting during the early weeks, the recurrence of the symptoms does not excite her apprehension, and therein, perhaps, lies danger. Vomiting and pain coming on suddenly in late pregnancy should always be regarded very seriously, and an exhaustive examination made. In a minority of cases, as already stated, little or nothing else can be found, and the absence of albuminuria fortifies one in the belief that whatever may be the cause it is not toxaemia. Should the cause be simple, sickness rapidly yields to simple treatment, such as rest and starvation, but if in spite of careful dieting or starvation, combined with enemata and diaphoresis, the patient continues to vomit, then she is in the gravest danger, and pregnancy should be terminated with all speed. But most patients suffering from toxaemia who begin with vomiting as the first and only symptom, rapidly develop the other familiar signs, and the diagnosis is easy.

Perhaps of greater value than the symptoms are the signs discovered by examination, and of these I regard an elevated blood pressure as the most important single sign. It is the most important because it is one of the earliest and also most constant. Albuminuria may vary from 3 per cent. to the slightest trace, which is often found in normal pregnancy, but the blood pressure is nearly, if not always, definitely raised early in the prodromal stage.

Further, unlike albuminuria, the height of the blood pressure is some measure of the gravity of the toxaemia, and an indication of the likelihood of fits supervening; for instance, Irving[9] has shown that with blood pressure—

Between 130 and 140 mm. Hg	...	1 in 32	developed	toxaemia
,, 140 and 150 ,,	...	1 in 11	,,	,,
,, 150 and 160 ,,	...	1 in 3	,,	,,
,, 160 and 170 ,,	...	1 in 2	,,	,,

Above 180 all developed toxaemia.

Therefore, in any patient complaining of any one of the prodromal symptoms, or during the routine ante-natal examination of pregnant patients, the blood pressure should invariably be taken and noted. During antitoxaemic treatment the blood pressure movements are amongst the best indications of the reaction of the patient. In bed, on a low or starvation diet, and freely purged and sweated, the blood pressure should be low—in the region of 100 to 110—and if it quickly falls from its original high figure to this low level the other symptoms usually clear up with it, and an expectant attitude may be continued. But if, in spite of depletion, the tension maintains its height, as it not uncommonly does, then eclampsia is still just as likely to develop, and further expectant treatment is dangerous. During pre-eclampsia the blood pressure should be determined at least twice a day, and the results plotted on the chart.

The second sign in the early stage is the quantity of urine excreted. The total for the twenty-four hours on an ordinary diet should be collected and measured. A definite diminution is significant, and the urine always shows other signs of abnormal renal activity in the shape of casts, albumin, or diminished urea output. Diminution in quantity is not an early sign, however, and therefore its chief value is as an indication of the progress of the case under treatment. The most reliable method of obtaining the quantity is by regular catheterization, as otherwise some urine may be lost during a movement of the bowels. But inasmuch as the total quantity of urine is variable in normal health, depending upon the amount of fluid taken, diarrhoea and sweating, it will be readily understood that figures of the total quantity of urine have not the quality of exactness, as an indication of progress, that is possessed, for example, by the blood pressure determinations. However, gross variations from the normal are easily observed, and are indications of serious renal insufficiency.

The third sign is albuminuria. In the great majority of all cases of toxaemia in pregnancy there is some albumin, and therefore its presence has definite value for diagnosis. Only in a small minority is albumin absent until fits occur, when it may suddenly appear in large amount. The percentage of albumin (Esbach) is very variable and cannot be taken as a guide to the severity of the case, nor is it of much value in prognosis. Some patients may suffer many fits with little more than a trace of albumin, while others with as much as 3 per cent. or 4 per cent. may never develop fits or other serious symptoms.

The chief value of albuminuria as a sign may be summarized as follows:

1. Its mere presence, very easily tested for, is the strongest evidence of some degree of toxaemia.

2. If there is a sudden increase in the amount while the patient is under treatment during the prodromal period, we have a definite sign that the patient is not under control, and is passing into a dangerous condition.

3. After an attack of eclampsia the rapidity or slowness of its disappearance has some significance. Broadly speaking, if it disappears rapidly and completely the disease has been due purely to pregnancy toxaemia and the prognosis is good, both immediately and for future pregnancies, while if the amount of albumin remains high and persists for some weeks during the puerperium there is evidence either that the disease was really chronic nephritis, and not true pregnancy toxaemia, or that if it were really toxaemia the kidney has suffered some permanent damage. The prognosis for the next pregnancy is not so good. It is therefore important to have the amount of albumin determined each day by the Esbach tube.

The Convulsive Stage.

Eclampsia proper differs from the prodromal stage in that there is added a fresh symptom—convulsions and often coma—while the other conditions, such as oedema and urine changes, may be more marked.

The fits vary in onset, number, and degree, and are of the utmost importance in their effect on the patient's chances of recovery. In general, a few slight fits without coma are associated with recovery, while the prognostic outlook worsens as the fits increase in number or severity, or if coma be superadded. To this there are exceptions—for example, a patient who has only had one fit may die, while occasionally another, who has had forty or more fits, recovers; but such cases are unusual, and it remains true that the patient's life is gravely prejudiced by a large number of fits. Every fit is a fresh threat to the patient, especially because of the great danger of cerebral haemorrhage, which is often the cause of death; moreover, every fit renders a living child still more doubtful.

The time of onset of fits is also of importance, inasmuch as the earlier in pregnancy they occur the more severe is the disease, and, further, ante-partum fits are more dangerous than intra-partum or post-partum fits.

While it is difficult to be sure as to other factors, the occurrence of convulsions has a definite relation to three conditions—the blood pressure, delivery, and external stimuli. First, the blood pressure usually mounts after fits have been established, and, in the absence of treatment, remains high. So long as it is elevated, especially while the patient is undelivered, fits are so liable to occur that a sequence of them may be expected. They may also occur in the later moribund stages, when the blood pressure is falling from exhaustion and cardiac failure, but should the tension be reduced by means of treatment there is every prospect of a diminution or cessation of fits. Further, if during treatment the blood pressure again rises to a dangerous height, fits will be likely to reappear.

Delivery of the child has such a marked influence in stopping fits that it has led many to believe that the only rational treatment of the disease is the earliest possible delivery. In about 8 or 10 per cent. of cases, however, the fits first occur after delivery, within the first twelve hours, so that though delivery is one of the surest methods of stopping fits it is not quite certain.

It is important to remember that, apart from the severity of the toxaemia, the number of convulsions may be increased by external stimuli, such as light, noise, manipulation, and passing a catheter; in fact, almost any interference with the patient may start a fit.

A second sign of fundamental importance is suppression of urine. For this reason a close watch should be kept on the amount of urine in the bladder at definite intervals. With the large amounts of fluid usually administered in the treatment of eclampsia, scanty urine or its suppression is a serious sign; on the other hand, an increase in the amount is of favourable import. Complete suppression of urine is so dangerous a symptom that it demands active and rapid surgical interference—nephrotomy or capsulotomy—as almost the only chance of saving the patient.

The qualitative examination of the urine in ordinary clinical work should be chiefly directed towards the search for casts and red blood cells in the deposit, as a large number of cellular casts is strong evidence of serious kidney mischief, and thus influences the prognosis. Further, the amount of albumin should be estimated in each specimen of urine obtained. The determination of urea and ammonia, though of great scientific interest, has probably not the same clinical importance as the other estimations.

A third point, sometimes overlooked, is the condition of the heart. Throughout the whole of the first or prodromal stage while the tension has been high, and particularly during the convulsive stage, the heart has been subjected to a great strain; not uncommonly dangerous dilatation, leading to sudden heart failure and death, occur. Further, I have recently seen a case which furnished strong evidence that the toxins of pregnancy exercise a specially deleterious action on the heart muscle, apart from the extra strain imposed upon it by the occurrence of fits. It is no uncommon result for a patient who has been successfully shepherded through the actual attack of eclampsia to die suddenly during following days from heart failure. Where there has been pre-existing chronic nephritis compensatory hypertrophy of the l e u t will probably have developed, but in pregnancy toxaemia there is a sudden very great effort required of a heart which is already suffering from the additional handicap of a specific myocardial poisoning. A study of the cardiac condition is of importance when deciding upon the various measures of treatment, such as massive saline injections, or doses of veratrone, or venesection, and we should be guided in the adoption of such measures by a knowledge of the state of the heart. After delivery also the heart should be carefully watched and treated if it has suffered dilatation.

Treatment.

It is not here possible to do justice to the very numerous methods of treatment which have been advocated for eclampsia. There has been endless controversy around the most fundamental principles of treatment. Broadly, there are two main schools—the "active" and the "conservative." The first maintains that as the child or placenta are the source of the poison, the sooner they are removed the better, and to this end it is prepared to deliver as soon as possible by Caesarean section or accouchement forcé; while the second group holds that the main line of attack should be towards elimination of toxin already in the system and prevention of the fits, combined with a more deliberate obstetric treatment.

Each side upholds its method by statistics more or less favourable, but the subject is still *sub judice*. Examples of such statistics are as follows:

Brandt[11] reports:

		Maternal Mortality.	Fetal Mortality.
1889–1905.	Entirely expectant ...	23.6 %	31.3 %
1909–1912.	Entirely "active" ...	18.4 %	23.4 %
1913–1915.	"Active" *plus* narcotics...	15.0 %	34.4 %

Total 431 cases.

Essen-Möller[12] reports 64 cases:

Spontaneous delivery (12 cases) ...	14.2 %	—
Active treatment (52 cases)	13.4 %	—

Forssner[13] reports:

1912–1915.	51 cases entirely expectant	9.8 %	—

Whatever statistics are examined, the wide variations in mortality under either method of treatment are striking. The difficulty lies in the undoubted variation in severity that seems to occur in different towns and at different seasons.

Those who advocate active interference involving the most rapid delivery hold that as the ovum is the source of the toxin the sooner the child is delivered the better. To this the answer of the conservatives is that while it is true that the ovum is the origin of the toxin, yet the insult and shock to the organism involved by rapid delivery is so evil in its effects that it more than counterbalances the benefit derived from an immediate arrest of the production of the poison; that sedative treatment in controlling the fits robs the disease of its chief dangers though not immediately curing it; and, finally, that while the fits are controlled the elimination of the toxin already present is the rational procedure.

Now, for the treatment of a protean disease like eclampsia, it appears to me futile to lay down a rigid set of rules. If ever a case should be treated on its own merits it should be eclampsia, for scarcely two cases present the same clinical condition. We should approach these cases in a flexible attitude of mind, prepared to do

anything, from the simple injection of veratrone or morphine to the peformance of Caesarean section and nephrotomy.

The greatest success will follow the path of the *via media*, each patient being treated on her merits. For example, a primigravida at term, developing frequent severe fits before labour, with the os closed and cervix not "taken up," and passing no urine, will probably do better if the child is removed by abdominal Caesarean section, combined with sedative and eliminative measures, than if labour is waited for or slowly induced, and allowed to drag on through many hours of fit-provoking pains.

But a multipara overtaken by fits, after premature labour has begun, with the prospect of a quick delivery, will certainly have a poorer chance if she is subjected to a forcible dilatation of the os, or cervical incisions, or vaginal Caesarean section. Broadly speaking, labour should be induced by a bag if it has not already started, but if it is established when the patient is first seen, it should only be interfered with if delayed, which is not common in eclampsia.

For the moderate cases I think the best is to employ the first few hours by sedative and eliminative treatment, which will diminish the degree of toxaemia, and put the patient in a better condition for the forthcoming labour. Of all the drugs veratrone appears the most satisfactory for the prevention of the fits and the reduction of albumin. Its chief physiological effect is the reduction of the blood pressure and pulse rate when they are high, a heavy fall occurring within half an hour after injection. It is not uncommon for no more fits to occur while the blood pressure is kept low by judiciously repeated injections of veratrone. The dose and time of injection are entirely conditioned by the state of the blood pressure and pulse—in fact, a dose should not be given unless both figures have just been determined.

The higher the tension and pulse the greater is the absolute fall after veratrone injections. The drug is potent, and liable to cause dangerous prostration if administered without due care. The general method of its use is to give an initial dose of 1 c.cm. where the tension is at 170 or above, with a correspondingly rapid pulse. For less high pressures a smaller dose, such as 0.75 or 0.5 c.cm., may be given. The first dose causes a rapid fall within half or three-quarters of an hour from 180 to perhaps 130, or less, usually with complete cessation of the fits, but it shows a tendency to rise again, sometimes within two hours, the pulse rate following suit. By repeated estimations of blood pressure every hour it is easy to arrive at the time for the next injection, usually of 0.5 or even 0.25 c.cm., according to the level of the tension. Veratrone does not stop restlessness in all cases, and for this troublesome and exhausting condition small doses of morphine are useful and without danger.

Having reduced the tension and pulse rate, and with this the liability to fits, say, after the first hour of treatment, it is necessary to have the colon washed out thoroughly until the washings are clear, as much as five or six pints being used if necessary. Gastric lavage is strongly advocated by many, but it is very disturbing to the patient, and may easily provoke a convulsion.

Every encouragement is to be given to free sweating by hot packs, electric lamps, or hot bottles, and after the colon has been washed out it is well to give saline rectal injections, containing glucose and sodium bicarbonate, up to a maximum of two pints within the first four hours. Further injections of saline are beneficial if there is good sweating and an increasing output of urine, but should there be a serious deficiency of the excretory activity too much saline injected is liable to embarrass the heart and cause pulmonary oedema, two not uncommon causes of death. Venesection is not so commonly employed as formerly, but is distinctly indicated if there is cyanosis and embarrassment of the right heart. It should always be considered in relation to the proximity of delivery, when a sufficient amount of blood may be lost from the uterus.

After twelve or more hours of this treatment the patient is usually in a much better condition and ready for the induction of labour or any other obstetric operation. The fits have ceased, the mental condition is less confused, the pulse slower and stronger, the blood pressure between 110 and 140, the skin acting freely, and the bladder containing more urine.

Where these conditions obtain in a multipara and labour pains have not begun, I think the quickest and safest obstetric procedure is the insertion of a Champetier de Ribes bag. Labour is rapidly induced, and there is a minimum of shock. Should the presentation be a breech, an alternative is the bringing down of a leg. Observation of the blood pressure and pulse rate, with the administration of veratrone when necessary, should be continued for at least twelve hours after delivery, even when no further fits have occurred.

This is, of necessity, only the briefest account of the treatment of eclampsia—time forbids discussion of variations and elaborations of method. Suffice it to say that for cases of moderate severity I am a firm believer in the preliminary employment of conservative sedative and depletive treatment, followed later, and only if necessary, by obstetrical assistance. This should never be a violent interference, such as accouchement forcé by the vaginal route, but rather of the nature of the use of forceps, version, Champetier de Ribes's bag, and bringing down a leg, or, as an operative measure, abdominal Caesarean section. Few diseases show a greater variation in mortality. We find the same principles of treatment producing widely differing results in different towns and countries, rendering a comparison of statistics very difficult.

Some cases will die—must die—whatever is done for them. No patient can survive if the liver is almost totally destroyed by massive necrosis. But it is in the pregnancy toxaemias that preventive medicine has one of its greatest opportunities. Eclampsia is almost an entirely preventable disease, for its premonitory signs are plain for any who take the trouble to watch for them.

REFERENCES.

[1] Paul Bar: *Leçons de Pathologie Obstétrique*, 2, 1907. [2] Leith Murray: *Journ. of Obstet. and Gynaec.*, February, 1913. [3] Theis and Lockemann, quoted by L. Murray, loc. cit. [4] L. Murray: Loc. cit. [5] Fieux and Mauriac: *Compt. Rend. Soc. Biol.*, 1910, T. 68, No. 17. [6] Young: *Proc. Roy. Soc. Med.*, June, 1914. [7] L. Murray: BRITISH MEDICAL JOURNAL, 1915, vol. i. [8] C. White: *Proc. Roy. Soc. Med.*, 1919, vol. 12. [9] Irving: quoted by Dice, *Amer. Journ. Obstet.*, 1918, lxxvii. [10] Miller: *Amer. Journ. Obstet.*, August, 1915. [11] Brandt: *Arch. Mens. d'Obstét. et de Gyn.*, July-September, 1916. [12] Essen-Möller: Ibid. [13] Forssner: Ibid.

A Collective Investigation

OF

TEN THOUSAND RECRUITS WITH DOUBTFUL HEART CONDITIONS.

Conducted at the National Hospital for Diseases of the Heart by C. CHAPMAN GIBBES, R. O. MOON, S. RUSSELL WELLS, P. HAMILL, FREDERICK W. PRICE, *and* J. STRICKLAND GOODALL.

REPORT IV.*

COMPILED BY

S. RUSSELL WELLS, M.D., B.Sc.

THE ETIOLOGY OF MITRAL STENOSIS.

IN dealing with the etiology of mitral stenosis we thought it wise only to take into consideration those cases where this lesion could be diagnosed with practical certainty. Excluding those cases where there was reason to believe that the murmur was really the so-called Flint, or was due to pericardial friction, we have taken as signs of mitral stenosis an apical presystolic murmur or a definitely apical murmur in diastole. This gave us an assemblage of 306 cases where the diagnosis of mitral stenosis depended mainly on the presence of a presystolic murmur, and an assemblage of 36 where either an early diastolic, a mid-diastolic, or a diastolic extending through the whole of diastole occurred at the apex. That is to say, in 342 of our 10,000 cases mitral stenosis was thought to be certainly present. There were, however, 48 cases in which mitral stenosis was strongly suspected, though no presystolic murmur nor definite diastolic could be heard. The reason for this opinion varied in the different cases, but it is needless to enter into the details here. Of these 48 cases 18 gave a history of rheumatic fever, and 30 no history of this affection. After careful consideration we thought it wiser to exclude these 48 cases entirely from our universe of discourse, which reduces the number of

* The earlier reports were published in the BRITISH MEDICAL JOURNAL, 1918, vol. i, p. 555; vol. ii, p. 248; 1919, vol. i, pp. 510 and 544.

cases we have to deal with from 10,000 to 9,952, of which 342 were considered to have mitral stenosis, and 9,610 to be free from this lesion. It is necessary to repeat the caution given when speaking of aortic regurgitation with regard to the nature of our material. It must be remembered in drawing any deductions that these cases consist of men alone, between the ages of 16 and 42; consequently any conclusions arrived at do not necessarily apply to women, nor are they necessarily valid for the earlier or later periods of life. In many of the 342 cases other lesions besides mitral stenosis were believed to be present.

TABLE I.—*Showing the Diagnoses made.*

Diagnoses.	No. of Cases.
Mitral stenosis alone	105
Mitral stenosis and mitral regurgitation	148
Total pure mitral lesions	253
Mitral stenosis and—	
Tricuspid regurgitation	1
Tricuspid regurgitation (secondary)	1
Mitral regurgitation and pulmonary stenosis	2
Mitral and tricuspid regurgitation	3
Mitral and tricuspid regurgitation and roughening of aortic valves	1
Mitral regurgitation and roughening of aortic valves	9
Mitral regurgitation and aortic stenosis	1
Aortic regurgitation	15
Mitral and aortic regurgitation	34
Mitral and aortic regurgitation and aortic stenosis	4
Pericardial roughening	2
Mitral regurgitation and pericardial roughening	13
Tricuspid regurgitation and pericardial roughening	1
Mitral and aortic regurgitation and pericardial roughening	2
Total mixed lesions	89
Total	342

Adopting the method pursued in investigating the etiology of aortic regurgitation, the incidence, as shown by the histories of the various antecedent diseases dealt with, was compared in the case of our 342 mitral stenotics and in our whole universe of 9,952 cases. Many of the cases, of course, gave histories of more than one of the diseases inquired for.

TABLE II.—*Antecedent Diseases.*

	9,952 Recruits.		342 Cases of Mitral Stenosis.	
	No. of Cases.	Percentage of 9,952.	No. of Cases.	Percentage of 342.
Rheumatic fever	2,084	20.9	152	41.4
Rheumatism	1,636	16.9	59	17.3
Growing pains	2,692	27.0	86	25.1
Chorea	258	2.6	43	12 6
Tonsillitis	2,202	22.1	64	18.7
Scarlet fever	2,201	22.1	70	20 5
Diphtheria	744	7.5	21	6.1
Pneumonia	561	5.6	15	4.4
Influenza	5,646	56.7	150	43.8
Syphilis	207	2.1	7	2.0
Gonorrhoea	618	6.2	20	5.8
Strain	2,707	27 2	96	28.1

It will be noticed that the mitral stenotics show a much higher percentage giving a history of rheumatic fever than the average, and that the same applies to chorea, but that, with the exception that fewer stenotics than the average gave a history of influenza, the percentage for all the other illnesses were so similar in both cases as to make it appear that the incidence of these diseases in cases of mitral stenosis was purely accidental. A percentage table like this, though it has its uses, is open to many objections, so the degrees of association were calculated from Pearson's formula for Q_5, which gives a fairly close approximation of the correlation coefficient r, and which involves no assumption as to the characters of the two variates. The values of χ^2 for a fourfold table have also been calculated, because by calculating χ^2 a quantity P can be reached, giving the probability that the system is really a random sample from material in which the two variates are independent, quite apart from any assumption as to the nature of the distribution.

TABLE III.—*Correlation between Mitral Stenosis and Rheumatic Fever and Chorea.*

A.	B.	History of A. and B.	History of A. only.	History of B. only.	No History of A. or B.	Coefficient of Correlation.	Limit of Error.	χ^2
M.S.	Rheumatic fever	152	150	1,932	7,678	0.372	0.017	118.18
,,	Rheumatism	59	283	1,627	7,983	0.007	0.020	0.024
,,	Growing pains	86	256	2,606	7,004	0.036	0.020	0.65
,,	Chorea	43	299	215	9,395	0.349	0.018	139.71
,,	Tonsillitis	64	278	2,138	7,472	0.073	0.020	2.39
,,	Scarlet fever	70	272	2,131	7,479	0.034	0.020	0.56
,,	Diphtheria	21	321	723	8,887	0.052	0.020	0.91
,,	Pneumonia	15	327	546	9,064	0.060	0.020	1.04
,,	Influenza	150	192	5,496	4,114	0.208	0.019	23.91
,,	Syphilis	7	335	200	9,410	0.003	0.020	0.002
,,	Gonorrhoea	20	322	598	9,012	0.015	0.020	0.08
,,	Strain	96	246	2,611	6,999	0.016	0.020	0.135

A = Mitral stenosis. B = Etiological factor under consideration—for example, rheumatic fever, chorea, or the like.

From the above table it will be seen that the correlation coefficients and the value of χ^2 both suggest that there is real correlation between mitral stenosis and a history of rheumatic fever and chorea, while the values of Q_5 and χ^2 in those cases giving a history of influenza seem to imply a similar though not so marked connexion. The correlation coefficients in the case of histories of the other diseases are so low as to be negligible, and the value of χ^2 is so small as strongly to suggest that the system is not really a random sample from material in which the two variates are independent.*

Since the correlation between mitral stenosis and a history of rheumatic fever and chorea is so definite we must be careful in ascribing mitral stenosis to any other cause when there is an antecedent history of either of these two affections. We have analysed in detail the cases of mitral stenosis with histories of the different diseases investigated, and have compared the percentages giving a history of rheumatic fever in each case with the percentage of the whole 342 cases with this history. If two diseases such as rheumatic fever and pneumonia were both causes of mitral stenosis we should expect to find a smaller proportion of cases with a history of rheumatic fever among those also giving a history of pneumonia than among the 342 as a whole.

It will be seen from Tables IV and IVA that with the exception of rheumatism, diphtheria, and strain, the percentage giving a history of rheumatic fever is higher than the percentage of the whole 342 giving this history.

When we were dealing with cases of aortic regurgitation it was found, just as with mitral stenosis, that the case, giving a history of rheumatism showed a lower percentage with a history of rheumatic fever as well than the averages and it was suggested that probably some cases of true rheumatic fever had been included in the "rheumatic" group. Probably the same explanation holds good for mitral stenosis, though the difference is not nearly so marked as with aortic regurgitation. With regard to the

* The formulae used were—

$$Q_5 = \sin \frac{\pi}{2} \frac{1}{\sqrt{1 + K^2}}$$

$$\text{where } K^2 = \frac{4\,a\,b\,c\,d\,N^2}{(a\,d - b\,c)^2\,(a + d)\,(b + c)}$$

Q_5 being taken as a sufficiently near approximation to r (see Pearson, *Phil. Trans.*, 1900, series A, vol. 195).

$$(P \propto \chi^2 = \frac{N\,(a\,d - b\,c)^2}{(a + b)\,(c + d)\,(b + d)\,(a + c}$$

$$\text{Error: } \pm 2.02347 \times \frac{1 - r^2}{\sqrt{N}}$$

TABLE IV.—*Analysis of the Rheumatic History of 342 Mitral Stenotics.*

	No. of Cases.	With History of Rh. F.		Without History of Rh. F.	
		Cases.	Per Cent.	Cases.	Per Cent.
Total mitral stenosis ...	342	152	44.4	190	55.6
M.S. and rheumatism ...	59	21	35.6	38	64.4
,, and growing pains	86	42	48.8	44	51.2
,, and chorea	43	20	46.5	23	53.5

TABLE IVA. — *Comparison of the Percentage of 342 Mitral Stenotics giving History of Rheumatic Fever with the Percentages giving that History of the other Diseases Investigated.*

	No. of Cases.	With Rh. Fever.		With Rh., Gr. Pains, or Chorea.		Without Rh. History.	
		Cases.	Per Cent.	Cases.	Per Cent.	Cases.	Per Cent.
Total mitral stenosis ...	342	152	44.4	86	25.2	104	30.4
M.S. and tonsillitis ...	64	37	57.8	8	12.5	19	29.7
,, and scarlet fever ...	70	39	55.7	15	21.4	16	22.9
,, and diphtheria ...	21	9	42.9	7	33.3	5	23.8
,, and pneumonia ...	15	8	53.3	2	13.3	5	33.3
,, and influenza ...	150	77	51.4	33	22.0	40	26.6
,, and syphilis ...	7	4	57.1	2	28.6	1	14.3
,, and gonorrhoea ...	20	13	65.0	4	20.0	3	15.0
,, and strain	96	25	26.0	26	27.1	45	46.9

mitral stenotics with a history of diphtheria, the difference between 44.6 per cent. and 42.9 per cent. is so small as to be negligible, but the strain figure of 26 per cent. is suggestive.

When we were dealing with the etiology of aortic regurgitation we pointed out that, since acute rheumatism frequently produces lesions of more than one of the cardiac valves, we can use the ratio between pure and mixed lesions in the cases giving a history of any particular antecedent disease as a method of investigating the etiology. With aortic regurgitation we found that cases showing pure lesions of the aortic valves were less common than those where some lesion of another valve was also present, and therefore the ratio of pure aortic to mixed lesions was less than unity. In this connexion, however, it must be borne in mind that since the diagnosis of mitral regurgitation necessarily largely depended on the presence of an apical systolic murmur, many of the cases of aortic regurgitation credited with mitral regurgitation as well may have been due to secondary stretching of the mitral ring. Such stretching is not likely to occur when mitral stenosis is present. We found that as we passed from cases giving a history of rheumatic fever to those with no rheumatic history at all, the proportion of mixed lesions steadily rose, probably because the mitral was more likely to be affected when the cause was not true rheumatism. An inspection of the table at the commencement of this paper will show that with mitral stenosis pure mitral lesions are much more common than mixed lesions, and that of the 89 mixed cases in no less than 66 (practically three-quarters) aortic lesions were also present. Therefore the ratio between pure and mixed lesions in these cases of mitral stenosis is greater than unity.

It is interesting to notice (Table V) that the ratio 2.3 for chorea is very similar to that for rheumatic fever—2.53. In a previous paper we showed that there is a definite correlation between the incidence of these two diseases, and this similarity between the ratio of pure and mixed lesions is an additional support, though only a slight one, in favour of their identity.

The following table classifies the cases into three groups: (A) With definite rheumatic history, (B) with doubtful rheumatic history, (C) with no history at all suggestive of rheumatism. The ratio of mitral to mixed lesions suggests that there is some cause of mitral stenosis which is more likely to affect the mitral valve alone than does acute rheumatism.

TABLE V.—*Ratio of Pure Mitral to Mixed Lesions in our Cases of Mitral Stenosis, with the Histories of the various Antecedent Diseases.*

	Total.	Lesions.	Ratio.
		Mitral. Mixed.	
Rheumatic fever	152	109 : 43	2.53
Rheumatism without Rh.F. ...	38	28 : 10	2.8
Growing pains	44	36 : 8	4.5
Chorea	23	16 : 7	2.3
Tonsillitis	27	21 : 6	3.5
Scarlet fever	31	22 : 9	2.4
Diphtheria	12	9 : 3	3.0
Pneumonia	7	5 : 2	2.5
Influenza	73	59 : 14	4.2
Syphilis	3	2 : 1	2.0
Gonorrhoea	7	7 : 0	—
Strain	71	50 : 21	2.4

TABLE VI.—*Three Groups: Definite, Doubtful, and No History of Rheumatism.*

Group.	Total.	Pure Mitral Lesions.		Mixed Lesions.		Ratio of Mitral to Mixed Lesions.
		Cases.	Per Cent.	Cases.	Per Cent.	
A. With history of rheumatic fever	152	109	71.71	43	38.29	2.53
B. With history of growing pains, chorea, or rheumatism	86	65	75.58	21	24.42	3.19
C. With no history suggestive of rheumatism	104	79	75.96	25	24.04	3.16
	342	253		89		2.84

Age Incidence in Mitral Stenosis.

In dealing with aortic regurgitation we found that there was on the whole a decline in the incidence of this lesion between the ages of 17 and 41, but that when a history suggestive of rheumatism was excluded the incidence was practically the same for each quinquennial period. On taking the figures on the same method for mitral stenosis a somewhat similar general decline is found for the whole number of cases, but when any history suggestive of rheumatism is excluded there is a definite and fairly regular decline as the age advances. The numbers are not large, but, taken for what they are worth, they seem to indicate that the cause or causes of aortic regurgitation other than rheumatic fever have a fairly even incidence over the whole period between 17 and 41, while in the case of mitral stenosis such cause or causes are more active in the earlier portion under consideration.

TABLE VII.—*Age Incidence in Mitral Stenosis.*

(Omitting cases below 17 and over 41 years of age, and 47 cases of doubtful mitral stenosis.)

	Total Recruits Examined.	Total Mitral Stenotics.	M.S. with no History Suggestive of Rheumatism.
Ages 17 to 21	2,091	82 = 3.92 %	32 = 1.53 %
,, 22 to 26	2,008	69 = 3.44 %	22 = 1.09 %
,, 27 to 31	2,298	85 = 3.70 %	24 = 1.04 %
,, 32 to 36	2,107	61 = 2.90 %	14 = 0.66 %
,, 37 to 41	1,409	43 = 3.05 %	11 = 0.78 %

We see that the evidence gathered by the percentage method, the evidence afforded by the correlation coefficient, and that gained by investigating the proportion of cases giving a history of rheumatic fever where there

is also a history of another disease, all strongly point to rheumatic fever and chorea as efficient agents in producing mitral stenosis. We therefore thought it wise to eliminate all cases giving a history of one or other of these diseases before attempting to arrive at any conclusion with regard to what other factors may stand in etiological relation with mitral stenosis.

The following table gives the correlation figures when these two histories have been excluded.

TABLE VIII.—*Correlation Figures when Histories of Rheumatic Fever and Chorea have been excluded.*

Omitting 2,259 cases with a history of rheumatic fever or chorea and 25 cases of doubtful mitral stenosis without a history of rheumatic fever or chorea.

Total Recruits	7,716	Total Diphtheria	551
,, Mitral stenotics ...	167	,, Pneumonia	453
,, Rheumatism ...	1,375	,, Influenza	4,240
,, Growing pains ...	2,030	,, Syphilis	150
,, Tonsillitis	1,611	,, Gonorrhoea ...	427
,, Scarlet fever ...	1,626	,, Strain	2,262

A.	B.	History of A and B.	History of A only.	History of B only.	No History of A or B.	Coefficient of Correlation.	Limit of Error.	χ^2.
M. S.	Rheumatism ...	31	136	1,344	6,205	0.016	0.023	0.064
,,	Growing pains ...	40	127	1,590	5,559	0.045	0.023	0.49
,,	Tonsillitis ...	26	141	1,585	5,964	0.120	0.023	2.91
,,	Scarlet fever ...	27	140	1,589	5,950	0.109	0.023	2.47
,,	Diphtheria ...	9	158	544	7,005	0.070	0.023	0.81
,,	Pneumonia ...	7	160	444	7,105	0.075	0.023	0.85
,,	Influenza ...	65	101	4,174	3,375	0.248	0.022	16.42
,,	Syphilis ...	2	165	148	7,401	0.078	0 023	0.50
,,	Gonorrhoea ...	5	162	422	7,127	0.109	0.023	2.11
,,	Strain	63	104	2,199	5,350	0.139	0.023	5.82

It will be noticed that the correlation coefficient for influenza, 0.248, and χ^2 16.42, are sufficiently large to make it worthy of consideration. When we excluded those cases giving a history of rheumatic fever from our cases of aortic regurgitation, we found that the correlation coefficient between a history of influenza and aortic regurgitation was 0.218, χ^2 being 11.18, figures which are only a little smaller than those found under comparable conditions for mitral stenosis. How are we to account for these figures?

A history of influenza frequently means little more than a history of some febrile ailment, usually accompanied by lassitude, headache, and wandering pains. It is probable that infections due to many different agents are described by patients when giving histories as influenza. The initial illness recounted by Rose Bradford, Bashford, and Wilson as occurring in the acute infective polyneuritis described by them in the early part of 1919, would almost certainly be described by a patient as an attack of influenza, and no doubt many other pyrexias of unknown origin would figure in the history given by a patient as influenza. Some time ago Sir Thomas Horder expressed the opinion that mitral stenosis was in certain cases produced by some short infective illness other than rheumatic fever. Dr. C. F. A. Moss, who has worked as a medical missionary at Tananarivo in Madagascar for thirty years, in a private communication to the writer, states that mitral stenosis is of quite frequent occurrence among the natives of Madagascar, but that as a result of thirty years in an extensive practice of an exceedingly general character, he should say that acute rheumatism does not exist there, at any rate in the centre of the island, while there are various forms of other febrile disorders which are very common.

The organism causing acute ulcerative endocarditis is probably not the same as that producing acute rheumatism, and it is possible that there may be slighter infections, bearing a similar relation to acute ulcerative endocarditis that a boil or a localized attack of furunculosis bears to general pyaemia. May we not in the figures just given see statistical indications of the existence of some disease capable of producing organic valvular lesions, and having a preference for the mitral rather than the aortic valves, such disease being characterized by symptoms which the patient would describe as influenza, or possibly in some cases as tonsillitis?

When dealing with aortic regurgitation we found evidence pointing to strain as an efficient cause in producing this lesion. The figures for mitral stenosis and strain are very different. When rheumatic fever was eliminated in the case of aortic regurgitation we got a correlation coefficient of 0.433, χ^2 being 59.10; the comparable figures for mitral stenosis are 0.139 for the correlation coefficient, χ^2 sinking to 5.8.

The following table gives the classification of our 342 cases of mitral stenosis according to the strain they were exposed to either as a result of their occupation or recreations, and divides them further according to whether they gave a definite history of rheumatic fever, a doubtful history, or no history at all of this ailment. The figures for the total number of recruits and the comparable figures for our 307 cases of aortic regurgitation are included for comparison.

TABLE IX.—*Occupation and Exercise.*

	Light.	Medium.	Heavy.
	Per cent.	Per cent.	Per cent.
10,000 recruits	50.0	22.9	27.1
342 mitral stenotics	43.8	28.1	28.1
10,000 recruits	50.0	22.9	27.1
Mitral stenosis with rheumatic fever ...	49.3	34.2	16.5
Aortic regurgitation with rh. fever ...	52.5	29.6	17.9
10,000 recruits	50.0	22.9	27.1
Mitral stenosis with rheumatism, growing pains, or chorea	44.2	25.6	30.2
Aortic regurgitation with rheumatism, growing pains, or chorea	30.1	19.2	50.7
10,000 recruits	50 0	22.9	27.1
Mitral stenosis without rheumatic history	35.6	21.2	43.2
Aortic regurgitation without rheumatic history	23.6	11.1	65.3

Table IX shows that, as in aortic regurgitation, the patients suffering from mitral stenosis and giving a history of rheumatism show a drift from the heavy occupations and exercises to medium. As a history of rheumatism is eliminated there is an increasing percentage of cases who are engaged in heavy labour or indulge in strenuous recreations. This increase is much less pronounced among mitral stenotics than among aortic regurgitants. Since some of our cases of mitral stenosis also had their aortic valves affected, we thought it possible that the inclusion of such cases might account for the increase in the heavy exercise class. We therefore prepared the following table, contrasting the subjects of mitral stenosis in whom no other valve was affected with the subjects of aortic regurgitation in whom the aortic valves alone were affected. In each case we give the numbers for the mixed lesions as well for comparison.

TABLE X.—*Occupations and Exercise.*

MITRAL STENOSIS.

		Pure Mitral Lesions.			Mixed Lesions.		
		L.	M.	H.	L.	M.	H.
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Total mitral stenosis ...	342	45.45	27.67	26.88	39.33	29.21	31.46
With rheumatic fever ...	152	51.38	32.11	16.51	44.19	39.54	16.28
With rheumatism, growing pains, or chorea ...	86	44.62	27.69	27.69	42.86	19.05	38.09
Without history suggestive of rheumatism ...	104	37.98	21.52	40.50	28.0	20.0	52.0

AORTIC REGURGITATION.

		Pure Aortic Lesions.			Mixed Lesions.		
		L.	M.	H.	L.	M.	H.
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Total aortic regurgitation ...	307	39.52	24.19	36.29	40.93	20.77	38.25
With rheumatic fever ...	162	50.0	34.29	15.71	52.17	28.25	19.57
With rheumatism, growing pains, or chorea ...	73	34.48	17.24	48.28	29.55	15.91	54.54
With no history suggestive of rheumatism ...	72	16.0	4.0	80.0	29.79	10.64	59.57

L.=Light; M.=medium; H.=heavy.

An inspection shows that while in the case of mitral stenosis there is an increased percentage of those who indulge in heavy exercise as we pass from a history of rheumatic fever to no history suggestive of rheumatism, the increase is in no way comparable with the increase in the case of pure aortic lesions; and, further, that as we pass from pure mitral lesions to pure aortic lesions where no history of rheumatism exists, there is again a steady increase in the percentage engaged in heavy exercise. Another remarkable fact that this table reveals is that the distribution between light, medium, and heavy exercise is practically the same for both aortic and mitral cases where there is a history of preceding rheumatic fever. The deductions which we are inclined to draw from these tables are that while strain has possibly some effect in producing mitral stenosis, it is nothing like so important a factor as it is in the production of aortic regurgitation. From the extremely similar numbers in aortic and mitral cases in the various strain groups, we cannot help suspecting that the disability that rheumatism causes, and which determines the amount of exercise or work the patient does, is more dependent upon some common factor, such as damage to the cardiac muscle, than on the particular valve affected.

When we were dealing with aortic regurgitation we compared the number of cases engaged in heavy, light, and medium labour who gave no history of acute rheumatism with numbers calculated on the assumption that strain and rheumatic fever were the two chief causes of aortic regurgitation, and we found a remarkably close agreement between the calculated and the actual figures; when we applied this method to the mitral stenotics the difference between the actual and calculated numbers was so great as to negative such an assumption, which again leads us to the same conclusion as the other figures in the present communication—namely, that there is another cause of mitral stenosis besides rheumatic fever, which is not strain.

SUMMARY.

Taking aortic regurgitation and mitral stenosis as the two typical valvular lesions which can be diagnosed with comparative certainty during life, the results of the present statistical inquiry lead us to the following conclusions:

1. The most important etiological factor in the production of organic lesions of the heart valves in men between the ages of 18 and 41 is rheumatic fever.
2. Strain can independently produce aortic regurgitation.
3. While strain may be a cause of mitral stenosis, it is a much less important factor than in the production of aortic regurgitation.
4. There is a third agent giving rise to symptoms simulating influenza, which is an efficient cause of mitral stenosis, and can possibly affect the aortic valves as well, but is not nearly so likely to do so.

We have been unable to find any statistical evidence that syphilis, scarlet fever, diphtheria, pneumonia, or gonorrhoea, are causes of valvular lesions, nor can we find statistical evidence that a history of growing pains points to affections productive of valvular lesions. The same may be said, with slight reservations, of a history of rheumatism where there is no clear account of pain, swelling of the joints, fever, or confinement to bed. The evidence in favour of chorea as an efficient cause of mitral stenosis is strong, and we have found some, though not very striking, evidence in confirmation of the view that chorea and rheumatic fever are both manifestations of the activity of a common cause.

THE IMMEDIATE CLOSURE OF EMPYEMATA.

BY

FRANK HATHAWAY, M.D.,

SURGEON, KING EDWARD VII HOSPITAL, WINDSOR.

THERE is nothing new under the sun, and I was very much surprised, after I had drafted this paper, to be told by a friend of mine that twenty-five years ago it was the custom at King's College Hospital, under Lord Lister, to wash out their cases of empyema and sew them up. The fact remains, however, that when I returned from France late in 1917. it struck me that in the treatment of empyema it was not sufficient merely to open the abscess and put in a drainage tube, but that something more should be done and the wound immediately sutured.

These short notes are the result of my experience since I published my first successful case in a paper on the abuse of drainage tubes[1] in 1918, when I thought I had struck something original and really good. Although I am not a pioneer in the immediate closure of empyemata, I hope that the success I have met will stimulate others to follow the lines of treatment I find by experience to give the best results.

It stands to reason that the simple resection of rib, letting out of pus, and putting in of a drainage tube is not the ideal and complete treatment of empyema. Something more is wanted, because re-expansibility of lung is far more important than the mere evacuation of pus, and this re-expansibility can only be produced in two ways: (1) By introducing the whole hand into the pleural cavity and freeing the lung of all adhesions and removing all fibrinous clots; (2) by immediate closure of the wound.

Those who have had experience of chest surgery in France learnt that the first thing was to do away with a "sucking wound." Why, then, should we by the use of a drainage tube deliberately establish one in the treatment of empyema? By using an open tube the atmospheric pressure in the pleural cavity must be greater than that in a collapsed lung, and in order to get a lung to re-expand as quickly as possible it is essential to produce a vacuum in the pleural cavity. This result can only be attained by immediate closure of the wound, after filling up the cavity with some fluid.

Every surgeon in France was surprised to observe how quickly the lung re-expanded after immediate closure for gunshot wounds, and the same holds true for empyemata. Breath sounds will be heard down to the base of the lung within a few days after operation, and the lung will rapidly push out the fluid left, so that it comes to lie under the skin and can be easily and painlessly evacuated.

Therefore we may lay it down as an axiom in chest surgery that the lung will quickly re-expand if only it is given a fair chance. This favourable condition can only be secured by freeing the lung from all adhesions and by closing the wound at once.

If these two main rules are carried out, we shall do away with the old-standing cases of empyema which go on from year to year, with collapsed lung and a persistent sinus, and eventually have an enormous Estlander operation performed. Is it too good to hope that this operation will become a thing of historical interest only?

As I have pointed out elsewhere, there is no reason why a pneumococcal infection should be treated on lines different from a tuberculous infection. In either case, by using an open drainage tube, we are asking for trouble by producing a secondary mixed infection.

It is important to note that a careful bacteriological examination is essential in every case of empyema. If pneumococci or pneumococci and staphylococci are present the wound may be sutured; but if streptococci are present, then I think it advisable to remove the stitches and treat by some open method—that is, Carrel-Dakin, packing with gauze, or by a drainage tube.

Operation.

I have, since my return from France, sewn up all my cases, and my experience up to date has taught me that the following are the best lines:

I have always used a local anaesthetic, but I am inclined to think that when handling the lung a little general anaesthetic with it is useful.

I resect sufficient rib, either a long section of one rib or adjacent parts of two ribs, to allow of the introduction of the whole hand into the pleural cavity. This is the first most important point, because, after evacuation of the pus, it is essential to pass the hand into the chest cavity and strip off the collapsed lung all adherent fibrin and separate the lung from all adhesions. In any early case this is easily done, but an old-standing one will require much freeing of the lung in order that it may recover its re-expansibility. I then wash out the pleural cavity with flavine till the fluid comes away quite clean, and fill up the chest with a 2 per cent. suspension of iodoform in sterilized paraffin. The pleural wound is then sewn up with catgut, not that I think this is very important, because these stitches soon give way. I then carry out immediate

closure of the skin wound with deep sutures, so as to leave no "sucking wound."

The next important point is the after-treatment. When dressing on the next and following days the wound will be bulging; this is due to a mixture of pus and iodoform and paraffin being pushed out of the pleural cavity by the expanding lung under the skin. Daily I introduce the needle of an exploring syringe between the edges of the wound—this is quite painless—and extract all the fluid I can. This process usually takes ten to fourteen days, depending on the re-expansion of the lung. Daily bacteriological report of this fluid shows that the number of organisms in a field steadily diminishes. A certain amount of this mixture of pus and iodoform and paraffin will ooze out also into the dressings.

The two most important points in technique, then, are—

1. Introduction of the whole hand into the pleural cavity to separate adhesions and remove all fibrin. The lung must be made to re-expand.

2. Daily evacuation by an exploring syringe of the pus and paraffin as it is pushed out under the skin by the re-expanding lung.

I have now sutured 9 cases. The ages of the patients were 55, 53, 44, 30, 27, 25, 18, 4, and 2½. All were pneumococcal except two; one was staphylococcal as well as pneumococcal, and one which was my only failure; this was a tuberculous case—a man, aged 44, with two big abscesses pointing under the skin, one behind and one in front. He was very debilitated and ill. As it was one of my early cases I did not sufficiently explore the chest with my hand; had I done so I should have found, as I did *post mortem*, that the lung was tied in a knot at the root. I sewed the incision up, and the patient died in twenty-four hours. After seeing the condition of his chest I am quite sure the result would have been the same had I drained with a drainage tube or sewn up.

Of the other eight cases, all made good and rapid recoveries. The temperature fell at once, and the pulse and respirations came down more gradually.

The duration of the disease in these cases varied from two to six weeks, after the resolution of the primary pneumonia.

A further suggestion has occurred to me, but I have not lately had an empyema to try it on. It is this: Whether it would not be a good plan to insert into the pleura a soft piece of folded rubber—that is, a passage tube—in order gradually to let out the iodoform and paraffin, and to do away with the daily needling of the collection under the skin. This piece of folded rubber will not allow air to enter the pleura, and will yet slowly allow the escape of pleural contents.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, 1918, i, p. 718.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF FACIAL TROPHONEUROSIS WITH DEFORMITY OF THE HAND.

As progressive facial hemiatrophy is a rare condition, the notes of the following case observed during the examination of recruits will be of interest.

A boy, aged 17, presented the following structural abnormalities, which are seen in the photograph.

Bones. — There was atrophy of all the bones of the right side of the skull, including the cartilaginous portion of the external ear. The metacarpal and phalangeal bones of the thumb and right index finger were atrophied and deformed.

Muscles. — Wasting was noted on the right side in the muscles of the face and of the thenar eminence, and to a lesser degree in the muscles of the neck; the right sterno-mastoid, however, was well formed. The right upper limb was poorly developed although he was right-handed.

Nerves.—Epicritic and protopathic sensations were everywhere normal; in no muscle was there palsy.

Other points of interest were that the right carotid and radial pulses were perceptibly weaker than those of the left side, and that the skin of the affected side was of a more delicate texture.

The boy is a junior member of a family of fifteen, and I have excluded as far as possible the question of natal trauma with resultant torticollis and facial asymmetry.

Wrexham. I. H. LLOYD, M.B., B.S.Lond.

FOREIGN BODY IN BRONCHUS.

THE case reported in the JOURNAL of May 1st, p. 602, by Mr. W. C. Cammock, in which a toy air balloon was present in the left bronchus, recalls a similar one with which I had to deal about three years ago.

A boy, aged 11, when playing in the street, inhaled a small rubber balloon with wooden mouthpiece which caused immediate and complete respiratory obstruction. This was relieved by tracheotomy performed by a doctor near whose house the boy was at the time. He was then taken to the Liverpool Royal Infirmary, and when I saw him there soon after his arrival he was suffering considerably from shock, and surgical emphysema, originating no doubt from the tracheotomy wound, was present over the neck and a great part of the trunk. The boy's condition at the time did not justify any attempt to find and remove the foreign body which was probably then in the larynx. On the following day the rubber balloon without the wooden mouthpiece was coughed out, and the boy could breathe and phonate clearly on closing the tracheotomy opening. The surgical emphysema disappeared and his general condition improved, so that six days after the accident I considered it safe to endeavour to remove the mouthpiece which was presumed to be lying in some part of the bronchial tree, although there were no physical signs in the chest giving any clear indication of its position. Inferior bronchoscopy at once revealed its presence in the right main bronchus, from which it was removed without difficulty. The absence of physical signs of obstruction of the bronchus was due no doubt to the fact that air had passed freely through the lumen of the foreign body as well as between its walls and those of the bronchus in which it lay quite loosely.

THOMAS GUTHRIE, M.B., F.R.C.S.,
Honorary Laryngologist, Royal Infirmary, Liverpool.
Liverpool.

CARBOHYDRATE EXCESS AND BERI-BERI.

CONSIDERABLE interest attaches to the fresh light thrown upon the pathogeny of rickets and beri-beri by Professor Mellanby in his opening remarks at the Section for the Study of Disease in Children of the Royal Society of Medicine on February 27th, 1920. While admitting that administration of the suitable vitamines in rickets and beri-beri will effect a cure, he holds it not improbable that the two diseases are brought about by some other elements in the diet, probably a carbohydrate excess, together with some considerable protein deficiency. Such facts are in agreement with results of observations I made some years ago upon the former diets of beri-beri patients, in which, generally speaking, in addition to the lack of the particular antineuritic vitamine, carbohydrate was found to bulk largely in the diet, with insufficient intake of protein derived principally from polished rice and dried fish.

The epidemiological distribution of beri-beri still, however, to some extent remains unsolved, in its special incidence upon sea-coast places, in which immigrants specially suffer, whilst residents partaking of an identical diet almost invariably escape. In regard to occupation I found a large number of those engaged in sedentary trades, such as the Chinese tailors in Singapore, specially prone to the disease.

Whilst I hesitate to introduce a further causative factor in beri-beri, it may well be that a degree of acidosis is the ultimate determining agent in the production of neuritic symptoms, a condition now known to be liable to arise in new arrivals to the hot moist climate of the seaboard towns of the Straits Settlements, being aggravated by the already mentioned dietary deficiencies and excesses, against which the Straits-born inhabitants have become more or less immune through prolonged residence.

The connexion between neuritis and acidosis may be further traced in the neuritis complicating diabetes and diphtheria, in which acidosis is usually a feature in cases which develop neuritis. There is some direct evidence in the results of Brandon, Cooper, and others in favour of the view that the offending element in the diet in polyneuritis avium is a carbohydrate excess.

Pellagra is now definitely known to result not from lack of a vitamine but from a diet of low biological value, such as maize.

Whether or not the function of the vitamine is to preside over metabolism through the stimulation of one or more hormones is yet undetermined, but such a view would appear feasible in the light of recent observations on the pathogeny of beri-beri and the kindred "deficiency" disease of rickets.

K. SIMPSON, M.D., M.R.C.P., D.P.H.,
late Medical Officer, Colonial Service.

Reports of Societies.

RADIUM THERAPY.

AT a meeting of the Sheffield Medico-Chirurgical Society, held on April 15th, Dr. RUPERT HALLAM read a paper on the therapeutic uses of radium. After a brief description of the chemical and physical properties of the metal, he explained the methods employed in estimating the quantity of radio-activity in the various applicators used in medicine and surgery. The strength of each applicator supplied by the Sheffield Radium Institute is described in terms of radium metal, and he suggested that it would be of great advantage for the comparison of doses and results if this unit of dose were universally adopted. Although the Sheffield radium, which was purchased in 1915, was primarily intended for the treatment of inoperable malignant disease, it had also been used extensively for the treatment of certain skin diseases. In his experience the results obtained in the treatment of rodent ulcer, providing the ulcer did not involve the bone or conjunctiva, were good. He had latterly employed carbon dioxide snow in conjunction with the radium, and anticipated a higher percentage of non-recurrences. Thirty-three cases of cavernous naevi treated during the year 1919 had all responded exceedingly well, and he maintained that this method superseded all others. A large number of cases of malignant disease had been treated during the last four years by the surgeons of the four voluntary hospitals in Sheffield; cases of sarcoma apparently responded most favourably to the application of radium, and four such cases which had been free from recurrence for periods varying from one to four years were shown. The results of the treatment of carcinoma of the cervix had been disappointing. In no case of carcinoma of the mouth could improvement be said to have occurred. In conclusion, Dr. Hallam maintained that apparent cure of inoperable malignant disease by radium was exceedingly rare, but that it often relieved pain, lessened discharge, and gave patients hope.

At the close of the paper several members related their personal experience of the treatment of malignant disease with radium. Dr. MILES PHILLIPS had found it of little value in carcinoma of the cervix. He expressed the opinion that equally good results were obtained by curetting the growth, and he related a case in which this method had been employed and the growth remained quiescent for four years. Dr. WILKINSON described several cases of sarcoma of the tonsil which had responded well to the treatment and were apparently free from disease. Mr. ARCHIBALD CUFF had employed it with satisfactory results in two cases of menorrhagia.

PSYCHOLOGICAL ANALYSIS.

AT a meeting of the Manchester Medical Society, held on March 3rd, 1920, Professor R. B. WILD, the President, being in the chair, Professor T. H. PEAR read a paper on psychological analysis, which he defined (following Bernard Hart) as "any method whereby the nature and relationship of the causes responsible for the patient's (mental) condition are determined, and the condition is removed by the rearrangement and readjustment of these causes." The term was said to be wider than psycho-analysis; the latter should be reserved to describe that method which owed its inception to Sigmund Freud. The purpose of the speaker was to describe the nature and uses of psychological analysis (of which psycho-analysis was one variety) in the diagnosis and treatment of what were known as the "functional nervous disorders." Of these disabilities there were two kinds, often but not always distinguished sharply from each other: (1) Conversion hysteria, (2) the anxiety neuroses. These two types of disorder might be symptomatic of different kinds of mentality in a patient, and the cure might necessitate different methods of treatment. Professor Pear said that, though psychological analysis was only one method in psycho-therapy, it was sometimes the only method which would ultimately be successful, because it was the only "radical" method. The different psychological processes involved in the methods known as suggestion, persuasion, and analysis were discussed and compared, and reference was made to the view taken by Bernard Hart of the differences between these disorders. It was pointed out that the meaning attached to the word "suggestion" was usually extremely vague, and that, though suggestion probably entered into treatment both by persuasion and analysis, it could be distinguished from them. The definitions of suggestion and persuasion given by Hart in the *Proceedings of the Royal Society of Medicine*, vol. xii (Section of Psychiatry, pp. 13–34) were further discussed. In conclusion, Professor Pear pointed out that the adoption of all methods of psycho-therapy, and in particular of the analytic method, required a knowledge of the technique and of the psychological processes underlying them. He emphasized the necessity of training medical students in the future to understand and to discriminate between the uses of the various methods.

Professor E. S. REYNOLDS, Dr. D. E. CORE, Dr. S. HERBERT, Dr. A. V. STOCKS, and Dr. S. R. WILSON took part in the subsequent discussion.

MIXED FUNCTIONAL AND ORGANIC PALSY.

AT a meeting, held on February 27th, of the Section of Medicine of the Royal Academy of Medicine in Ireland, the president, Dr. G. PEACOCKE, being in the chair, Dr. DRUMMOND showed a case of senile urticaria pigmentosa of fifteen years' duration in a man of 68. Dr. O'KELLY, who had examined sections of the skin, reported the presence of mast cells in large numbers; this was considered by Brock, Unna, and Gilchrist to be pathognomonic. This patient suffered also from auricular fibrillation, and had been treated by Dr. NESBITT, who showed slides of tracings taken to demonstrate the condition.

Dr. MAXWELL showed a patient of 58 suffering from pituitary tumour, who complained of difficulty in reading. There was a history of two years' headache and dizziness. She was found to be suffering from bitemporal hemianopsia; the turbinated bones on the right side were very oedematous.

Dr. PURSER stated that he had seen the case. There was bad headache, but not severe enough to make one suspect intracranial growth. Amenorrhoeic signs were of no value as the patient was past the menopause; fat was slightly increased and there was some loss of hair. The tumour of the pituitary was well shown by *x*-ray photograph. He asked for views as to operative treatment.

Dr. SPEARS showed a case of paralysis of the left arm and leg in a woman of 28. In February, 1919, she was delivered of a healthy male child. The placenta was torn; after its removal she had a haemorrhage, and was unable to move her left arm or leg. A fortnight later she was sent to Monkstown Hospital, where she had electrical and massage treatment for nine months and improved greatly. She had severe pain on the left side of her head and face; the left side of her face was "crooked," and all food dropped out of her mouth on that side.

On examination the arm was held in a position of tetany, except that the interphalangeal joints were flexed instead of extended, and that the wrist was drawn to the radial instead of to the ulnar side. Sensation, except touch, was normal. After slight massage some movements of the arm were produced. Similar conditions were present in the leg. *Reflexes:* Left knee-jerk exaggerated, right sluggish, ankle clonus marked in left foot. Babinski? Abdominal reflexes absent.

Wasting of calf muscles of left leg; painless periarticular swelling of both knee-joints. Eyes normal; Wassermann test

negative. *Electrical reactions:* All muscles of arm and leg responded to faradic and galvanic currents.

Dr. PURSER said there was probably a functional element in the case, aggravated by not having been taken in hand earlier, but as the gait was characteristic of hemiplegia, he thought the condition was organic in origin, whether due to haemorrhage or thrombosis, he could not say.

Dr. DRURY thought it was probably due to thrombosis caused by slow and scanty circulation through the brain. He knew of two other cases following pregnancy in previously healthy women.

Dr. SPEARS, in reply, said he thought the case was one of mixed paralysis—that of the arm was functional and that of the leg organic. He had not examined the cerebro-spinal fluid: he thought Dr. Drury's theory of origin was probably correct.

TUBERCULOSIS SOCIETY CONFERENCE.

A CONFERENCE under the auspices of the Tuberculosis Society was held on May 13th and 14th at Leeds; delegates, including tuberculosis officers, medical superintendents of sanatoriums and of tuberculosis colonies, were present from all parts of Great Britain and Ireland. At the opening of the conference in the Town Hall the Tuberculosis Society was welcomed to the city by the Lord Mayor and by the Vice-Chancellor of the University (Sir Michael Sadler).

Dr. H. de Carle Woodcock, in the course of his presidential address, remarked that in Leeds the civic authority had been less ready than private enterprise in the fight against disease. Robust democracies despised minorities, and the sick were a minority. Research should begin by co-ordinating our knowledge so that we knew where we stood in this matter. Dr. Benjamin Moore (Lister Institute) then moved the following resolution, which was carried unanimously:

> That in the opinion of this congress a conference should take place between those actually engaged in tuberculosis work and those engaged in research work, to arrange the lines on which future investigation should be conducted, and the manner in which the records should be kept and collated and their results circulated.

On Thursday afternoon Dr. A. Trimble, chief tuberculosis officer, Belfast, in opening a discussion on tuberculosis in workshops, said there was little to be gained by demanding increased wages unless the workers themselves knew how to make the best use of them; increases spent on cinemas, railway travelling, theatre going, more tobacco or more liquor were useless. Smokeless and dustless roads were required. Mr. Fisher (secretary of the Glass Bottle Makers' Society, Hunslet) stated that eight out of ten of the deaths he had to record in that trade were due to tuberculosis. This could be largely overcome if the men had their own blowpipes and proper means of sterilizing and keeping them clean. Dr. Nathan Raw, M.P., said that sanatorium treatment had not been a success, first, because it was a dull, monotonous, and uncomfortable life; and secondly, because the patients did not stay there long enough. The Ministry of Health were about to form a special department to deal with tuberculosis alone.

At the School of Medicine Dr. Marcus Patterson, who opened a discussion on recent advances in treatment, said that it was within the last twenty years that it was first decided to open the windows of rooms in which consumptives were being treated; until recently treatment had consisted only of fattening by milk feeding. Sir Henry Gauvain described the treatment of non-pulmonary tuberculosis at the Treloar Cripples' Hospital at Alton, and illustrated by lantern slides the correction of various deformities. He said that whilst under treatment the children received instruction for three hours a day; crippled lads between the ages of 14 and 18 were taught a trade.

At the Section on "Tuberculosis and child life" papers were read by Dr. A. Wear, chief medical officer to the Leeds Education Committee, and by Dr. C. W. Vining. The Section on Farm Colonies was addressed by Dr. S. Jacob and by Mr. A. G. Ruston, lecturer on farm economics at Leeds University. On Thursday evening popular lectures were given by Sir Henry Gauvain and by Dr. Halliday Sutherland.

Tuberculous Ex-Soldiers.

On Friday a discussion on tuberculosis and the war was opened by Sir Montague Barlow, M.P., Parliamentary Secretary to the Ministry of Labour, who said that 40,000 ex-service men might fairly claim to have been affected with tuberculosis as a result of the war. If they were allowed to return to ordinary life they would probably not only disappear very quickly but also infect others. The Interdepartmental Committee recommended that sanatorium accommodation, where deficient, should be increased; that after prolongation of the ordinary sanatorium treatment there should be facilities in connexion with many sanatoriums for a farm colony, with scope for employment in the workshop or on the farm; and that ten village settlements should be created. It was intended that the men should group themselves round the sanatorium in village life, with medical and industrial advantages; they should have pensions from the State. The Government had now set up a committee to establish as promptly as possible a reasonable number of these village settlements. It had been whispered to him that the money was going to be forthcoming, and that the Government were quite agreeable. Dr. Noel Bardswell stated that of 430 tuberculous ex-service men demobilized in the London area, 264, or 60 per cent., were already dead. The establishment of village settlements might take two or three years, and before this had been accomplished the great majority of the men would have succumbed.

Artificial Pneumothorax.

On Friday afternoon Dr. Vere Pearson opened a discussion on artificial pneumothorax. Careful observation, he said, was required in order to determine whether the less diseased side was capable of sustaining life. Refills should not be at too long intervals. He did not consider this treatment suitable as a routine for early cases. If one lung was collapsed the patient ran a greatly increased risk if he developed influenza or pneumonia. Dr. Morriston Davies said that no case was too early for pneumothorax. Adhesions, if they were fine bands, could be easily cut with a tenotome under *x* rays. Dr. Halliday Sutherland advised pneumothorax in suitable cases of recurring haemorrhage. After induction of pneumothorax he found that many adhesions would give way or stretch if the patient were given breathing exercises; in suitable cases the results were brilliant.

At the Section on "Care Work" addresses were given by Dr. Jane Walker and by Dr. Stanley Tinker.

At the Central Tuberculosis Dispensary Dr. H. Ellis demonstrated his treatment of lupus.

At the closing session, held at Harrogate on Saturday, Dr. Halliday Sutherland outlined the policy of the Society. Two years ago there was no other organization to advance the material interests of tuberculosis officers. The status of tuberculosis officers was now recognized, and a group representing their interests was being formed within the Society of Medical Officers of Health. It was not desirable for the two societies to amalgamate, because the Tuberculosis Society included not only tuberculosis officers, but sanatorium superintendents, hospital physicians, bacteriologists, and others interested in various aspects of tuberculosis. Their primary aims were not medico-political, but they desired to make the society a clinical institution representative of every aspect of clinical tuberculosis work in the United Kingdom.

Reviews.

BRITISH MOSQUITOS.

ONE of the most important functions of a large public museum is to publish monographs on subjects which are not attractive to the publisher; we may surely congratulate our own Natural History Museum on having produced in the last few months Hirst's work on *Demodex* and W. D. LANG'S *Handbook of British Mosquitos*.[1] The practical importance of the twenty-one gnats or mosquitos (we are glad to see that the author makes no attempt to use these English words as if they meant different insects) which inhabit this country is fortunately small; though three species of *Anopheles* are included in the list, our low mean temperature, even in summer, makes it unlikely that malaria acquired in Britain will ever again be common. Fortunately Dr. Lang's book is written so that it can be used as an introduction to the study of mosquitos generally. We know no textbook of medical entomology which gives the man unversed in the systematics of the Culicidae so definite a grasp of the points on which genera and species are distinguished. Anyone who is willing to work

[1] *A Handbook of British Mosquitos.* By W. D. Lang, M.D., M.A., Sc.D. London: Longmans, Green, and Co., B. Quaritch, Ltd., Dulau and Co., Ltd., and the British Museum (Natural History). 1920. (Roy. 8vo, pp. 131; 5 coloured plates, 132 figs. £1.)

through a few of the British species with the aid of this book will find that he has equipped himself with a general knowledge of the structure of these insects—not merely their scales and nervures, but their claws, their genitalia, and their palps. Having this knowledge he should be able to study the mosquitos of any part of the world with the aid of the various more technical monographs which are available.

The chapter on the characters by which larvae may be distinguished is one of the best features of the book. The medical man in the tropics has often been puzzled by his inability to discover any absolute structural difference between two mosquito larvae which he felt sure represented different species; if he is willing to put himself to school and to study these pages he will have a clear idea of what distinguishing characters can generally be relied upon.

The book contains sound biology as well as sound morphology. We have all of us seen gnats dancing in sheltered spots at dusk, but few of us know that the dancers are males, and that when a female approaches the dance becomes more and more frenzied; finally, the female overcomes her shyness, enters the swarm and is seized by a male with whom she leaves the dance; the males then continue to dance until another female enters the swarm and finds a partner. The prevalent idea that a feed of blood stimulates the female to pair appears to be true only of certain species of *Anopheles*.

The figures in the text and the coloured plates are alike excellent, though no magnification is given with most of the text figures. There is an index of specific names and synonyms, but no general index. In every other respect the book does immense credit to the author and the museum.

THE MEDICAL ANNUAL.

THE *Medical Annual for 1920*,[2] the thirty-eighth volume of this valuable series, begins with a short section on recent advances in materia medica and therapeutics, including *x*-ray work, radio-activity, and electro-therapeutics. This is followed by nearly four hundred pages in which the progress of medicine and surgery during the year 1919 is reviewed by some three dozen authorities, each of special competence in the subject with which he deals. Arranged as a dictionary of treatment, this part of the *Annual* is full of detailed information on all the urgent medical and surgical problems of the day. Deficiency diseases and vitamines are fully discussed, and the limits of fact and fancy in this interesting branch of chemical physiology are indicated. The most recent views on the dietetic treatment of diabetes mellitus are set out; lethargic encephalitis is described and its diagnosis discussed; a case is made out for the consumption of alcohol; the treatment of nasal catarrh and recurrent bronchitis by the administration of vaccines, preferably autogenous, is described, and much interesting information about bronchial asthma and hay fever has been collected. The various neuroses and allied states brought into prominence by the great war receive adequate consideration, and there is an excellent article on the surgical treatment of visceroptosis. The treatment of deep frontal headache by the administration of pituitary extract is described, and recent investigations into the pathology of paralysis agitans are summarized.

The third and last section of the *Annual* deals with numerous miscellaneous topics—public health administration, new books, sanatoriums, spas, and the like—of practical interest to medical men. The volume is provided with particularly good indexes, its illustrations are numerous and well reproduced, and its get-up does great credit to the publishers.

ANTHELMINTICS.

IN Southern Brazil the State of Paraná has set up a scheme of rural prophylaxis against three local plagues—namely, malaria, ankylostomiasis, and leprosy. This is worked in conjunction with hospitals, dispensaries, bacteriological laboratories, and similar adjuncts over a large area, under the direction of Dr. DE SOUZA ARAUJO,[3] who has recently published an account of the first few years of the scheme's growth. This volume is very fully documented, and in addition contains clinical and administrative accounts of ankylostomiasis, infection with round worms, trichocephalus, and other intestinal parasites. He finds thymol and oil of chenopodium to be, speaking generally, the best anthelmintics. The thymol is given in capsules by the mouth, finely powdered and mixed with an equal weight of glucose; the dose of thymol is 1 gram at the ages 1 to 5, and 5 grams at the ages 20 to 50; the patient is made to lie down for a time after taking it. No permanent ill effects have followed in any of the 20,000 of these treatments given; and larger doses can be employed in the case of hospital patients, say, 6 grams, together with 3 c.cm. of chenopodium oil. This oil is superior to thymol as a vermifuge, according to Dr. Araujo; adults receive 1.5 c.cm., children 2 or 3 minims for each year of their age; an adequate dose of magnesium sulphate should be given as a purge the night before. Ten days later this treatment is repeated. Neither thymol nor chenopodium oil can be expected to yield a radical cure for helminthiasis. It is reckoned that there are 600 to 800 lepers in Paraná; it is hoped to isolate these in colonies on some island off the coast, if the Federal Government will support the plan. There are many interesting points and discussions in this very full and florid report to which no reference can here be given; it is illustrated with many reproductions of photographs, and should be studied by all medical men interested in tropical medicine who can read Portuguese.

NOTES ON BOOKS.

THE fourth edition of Mr. RENDLE SHORT'S *The New Physiology in Surgical and General Practice*[4] consists of a series of fourteen essays attractively written about subjects of interest to general practitioners of medicine and importance to students facing final examinations, particularly in surgery. The subjects dealt with are all of daily recurrence in the public or the medical press, and the author is to be congratulated upon the skill and completeness with which he gives a scientific presentment of them in terms easily comprehensible. They include such things as food deficiency diseases, researches on the blood, a chapter on the heart contributed by Drs. Carey Coombs and Herapath, surgical shock, chloroform poisoning, the growth of bone, and many other interesting topics. Possibly the account given of the pineal gland (page 197) might be fuller were the author to avail himself of Krabbe's monograph on the subject. The book may be cordially recommended to all readers wishing to keep abreast of recent progress in physiology.

Mr. R. P. P. ROWE'S *Concise Chronicle of Events of the Great War*[5] provides a summary of the chief events that took place day by day in all the theatres of war 1914–1918. Seven appendixes are added, giving Austria's ultimatum to Serbia, Serbia's reply, Germany's declarations of war against Russia and France, President Wilson's Fourteen Points (we are reminded that *Le Bon Dieu lui-même n'en a que dix*), an abstract of the terms of the armistice, and an outline of the terms of the Peace signed at Versailles on June 28th, 1919. An excellent index closes the volume, which will have a permanent value as a work of reference.

Bulletins Nos. 4 and 5 of the *Stanford University Medical Publications*[6] contain some seventy reprints of articles that have appeared in various medical, surgical, and pathological periodicals in America during the years 1916, 1917, and 1918. They deal with a great variety of subjects, and show no little activity on the part of the university's alumni.

[2] *The Medical Annual: A Year Book of Treatment and Practitioner's Index. 1920.* Thirty-eighth year. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1920. (Demy 8vo, pp. 634; 80 figures, 47 plates. 15s. net.)

[3] *A Prophylaxia Rural no Estado do Paraná.* Esboco de Geographica Medica. By Dr. Heraclides Cesar de Souza Araujo, Assistente-adjunto do Instituto "Oswaldo Cruz," etc. Vol. i, Anno I, Summula dos trabalhos realizados de Setembro de 1918 a Agosto de 1919. Curityba-Paraná: Livraria Economica. 1919. (Med. 8vo, pp. 329; illustrated.)

[4] *The New Physiology in Surgical and General Practice.* By A. Rendle Short, M.D., B.S., B.Sc.Lond., F.R.C.S.Eng. Fourth edition, revised and enlarged. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd.; Toronto: The Macmillan Co. of Canada, Ltd. 1920. (Cr. 8vo, pp. 302. 9s. 6d. cloth; 7s. 6d paper.)

[5] *A Concise Chronicle of Events of the Great War.* By R. P. P. Rowe, M.A.Oxon. London: Phillip Allan and Co. 1920. (Demy 8vo, pp. 349. 10s. 6d. net.)

[6] Committee of Publication, Stanford University.

FUTURE PROVISION OF MEDICAL SERVICES.

REPORT OF THE MEDICAL CONSULTATIVE COUNCIL FOR ENGLAND.

WHEN the Medical Consultative Council for England of the Ministry of Health was appointed, on October 1st, 1919, it was instructed

> "to consider and make recommendations as to the scheme or schemes requisite for the systematized provision of such forms of medical and allied services as should, in the opinion of the Council, be available for the inhabitants of a given area."

The Minister of Health asked for an interim report at an early date. The Council has met on many occasions, and an interim report, signed by the chairman, Lord Dawson of Penn, and the vice-chairman, Mr. C. J. Bond, C.M.G., F.R.C.S., on behalf of the Council, has been issued, and has been placed on sale as from May 28th.*

The other members of the Council are Mr. N. G. Bennett, M.B., L.D.S.Eng., Dr. R. A. Bolam, Mr. Victor Bonney, F.R.C.S., Dr. H. G. Dain, Dr. A. Fulton, Sir William S. Glyn-Jones (secretary to the Pharmaceutical Society), Dr. T. A. Goodfellow, Dr. G. E. Haslip, Dr. T. Eustace Hill, Professor F. Gowland Hopkins, Miss M. H. F. Ivens, M.S., Miss Janet Lane-Claypon, M.D., D.Sc., Dr. A. Linnell, Dr. J. A. Macdonald, Mr. E. W. Morris (House Governor of the London Hospital), Dr. John Robertson, Dr. T. W. Shore, and Sir William A. Tilden, D.Sc., F.R.S.

We are indebted to the courtesy of the Chairman of the Consultative Council for an advance copy, from which the following sketch of its arguments and recommendations has been prepared. The report itself fills 28 foolscap pages, and is illustrated by a diagram, a map, and plans showing designs for Primary Health Centres of three types—small, intermediate, and large.

To illustrate the character of the scheme evolved by the Consultative Council we have reproduced a diagrammatic sketch given in the report, showing the disposition of the Primary Centres it proposes should be established, and their relation to a Secondary Centre, and, through it, to a Teaching Hospital Centre. Facing this diagram we have printed the "Summary of Recommendations" contained in Section VII of the report.

GENERAL PRINCIPLES AND A PARTICULAR APPLICATION.

The earlier part of the report points out that medical treatment must be both individual and communal, and that individual treatment may be either domiciliary or institutional. By communal treatment is to be understood pre-natal and maternity care, child welfare, the inspection and treatment of school children, dental treatment, clinics for early tuberculosis, and facilities for physical culture.

The general conception is that domiciliary treatment in each district should be based on a "Primary Health Centre." This institution would be conducted by the general practitioners of the district, and would be provided with an efficient nursing service. It would be linked with a "Secondary Health Centre" in some town conveniently placed in relation to the means of communication. Opportunities would be provided for consultation, either at the primary centre or at the homes of the patients, with physicians, surgeons, and specialists of the secondary centre, which would itself be brought into corresponding relation with a medical school hospital.

The general nature of the scheme proposed is illustrated by reference to that for Gloucestershire, described by Dr. J. Middleton Martin, county medical officer of health, in our columns of February 22nd, 1919, p. 218. The report states that the scheme has been approved by the county authorities, and by the authorities of the towns and hospitals, and that all the doctors in the county have agreed to the plan of service as framed. Details are given of the application of the scheme to the area of which the city of Gloucester is the centre. The area measures about thirty miles from north to south, and about twenty-four from east to west. It is nearly bisected by the river Severn, over which there is no road bridge below Gloucester, though there is a railway bridge fourteen miles down the river. The area contains various types of population: the mining district of the Forest of Dean, the tin-plate works at Lydney, cloth factories at Cam, and engineering works at Dursley. It includes also large rural districts, some of them sparsely populated. The report is illustrated by a map showing the places considered suitable for primary health centres, having regard to the distribution of the population and the means of communication. It indicates existing cottage hospitals and the provision proposed for supplementary services. The secondary centre would be in the city of Gloucester, which has a population of 50,000; it would be linked with the teaching hospitals and medical school of Bristol. A scheme on similar lines has, it is stated, been prepared by the North Eastern Hospitals Association for the counties of Durham and Northumberland.

DOMICILIARY SERVICE.

The domiciliary service, which is regarded as the first link in the chain of systematized treatment, would be rendered by the general practitioner, dentist, pharmacist, midwife, nurse, and health visitor.

Domiciliary nursing is regarded as an essential part of a health service, and the Consultative Council holds that nursing should be available for all illnesses and all persons when the doctor deems it necessary. The nursing services of a district should be based on the corresponding primary and secondary health centres, and existing organizations should be made use of for this purpose by the Health Authority. It is proposed that this subject should be referred to a special committee.

A PRIMARY HEALTH CENTRE.

The size and standard of equipment of a primary health centre would depend on the local conditions and needs of a neighbourhood. The distinguishing feature of the primary health centre in contradistinction to a secondary health centre would be that it would be staffed by general practitioners. Each centre would have general wards with an appropriate number of beds, also a midwifery ward. There would be provided also an operating room, radiography room, a laboratory for simple investigations, a dispensary, baths, and equipment for massage, electricity and physical culture, and a public mortuary. It is proposed that the general practitioner should attend at the primary health centre such of his patients as require hospital treatment, irrespective of their status. The centre would provide the patient with food, nursing, and all equipment for efficient treatment, but not with medical attendance, which would be paid for either by the patient, or through some method of insurance, or by the Health Authority. The centre would also contain a common room to serve as a meeting place for the general practitioners of the district, and for the storing of clinical records on a standardized system. Not all these various departments would be established at once at all the smaller centres, and it is hoped that the more fully equipped centres would render aid to those less well provided.

The primary health centre would have preventive as well as curative functions. The communal services, such as those for pre-natal care, child welfare, physical culture, and the examination of suspected cases of tuberculosis, would be gathered together at the primary centre. Domiciliary nursing is recognized to be an essential part of a health service, and residential accommodation would be provided at the primary centre, not only for nurses employed in it but also for those working in the district it serves and for midwives. An essential feature of the scheme is that the primary centres should be staffed by general practitioners, but that there should be opportunities for obtaining the assistance of consultants and specialists on the staff of the secondary health centres, who would attend at fixed intervals or make a special visit in an emergency. In suitable cases, of course, patients would be transferred to the secondary centre, and the scheme contemplates an ambulance service to maintain communication, on the one side between the home and the primary centre, and on the other between it and the secondary centre.

The dental clinic forming part of the primary centre would have a staff of visiting dental surgeons employed

* H.M. Stationery Office: through any bookseller, price 1s. Messrs. Eyre and Spottiswoode, East Harding Street, Fetter Lane, E.C.4, will supply a copy post free on receipt of a postal order for 1s. 3½d. (under the new postage rates.)

either on a part-time or whole-time basis. It would provide for patients of all ages all ordinary treatment, including extractions under anaesthesia, conservative dentistry, the treatment of inflammatory infections of the jaws and gums, simple orthodontal cases, and the fitting of dentures. Where possible the present school dental service would be transferred to the clinic.

In the scheme the work of the general practitioner would be partly domiciliary and partly institutional, for at the primary centre he would treat such of his patients as attended or were referred to him there; in this way it is hoped to secure the advantage of organization, combined with the preservation of liberty of thought and action. The alternative of a whole-time salaried medical service was carefully considered by the Council, but the report expresses its conviction that the public would be serious losers by the adoption of such a plan, for the clinical worker, especially if a general practitioner, requires a knowledge not only of the disease, but of the patient. His work must be individual. The confidence of the patient, which is of vital importance to treatment, must rest not only on sound knowledge, but on personal harmony. On the other hand, it was considered that laboratory workers and medical administrators who do not come into personal contact with the sick could with advantage be paid entirely by salary.

As has been said, it is proposed that there should be accommodation for communal services at the primary centres; each communal clinic would be directed by a doctor, or more than one, practising in the area who had specially qualified himself for the post. The directorships of these communal services would be part-time posts, and paid on that basis. The report expresses the opinion that as a beginning it might be possible in many instances to adapt existing buildings, such as cottage hospitals or Poor Law infirmaries, to the purposes of a primary health centre, but extensive alterations to buildings are deprecated, since the adapted buildings could only be makeshifts. Health centres and hospitals require adequate ground to permit of extension and for open-air clinics, convalescent treatment and physical culture. Many war memorial hospitals, it is said, are likely to be defective because their promoters have not made such provision and have failed to realize that a modern hospital should be part of a more comprehensive organization.

SUMMARY OF RECOMMENDATIONS.

A. DOMICILIARY — including both curative and preventive work.
Personnel.—Doctors; Pharmacists; Nurses; Midwives; Health Visitors and other officers of the Health Authority.

B. PRIMARY HEALTH CENTRES — including Medical, Surgical, and Maternity beds; Out-patient Clinics; Dental Clinics; Accommodation for equipment needed for treatment and investigation; Accommodation for the work of Communal Services; Ambulance Service.
Personnel.—General Practitioners; Visiting Consultants and Specialists; Officers engaged in Communal Services; Visiting Dental Surgeons; Workers in ancillary services.

C. SECONDARY HEALTH CENTRES — including Facilities for curative services in cases requiring highly specialized diagnosis or treatment; Accommodation for the work of Communal Services; Dental Clinics; Accommodation for workers in ancillary services; Ambulance Service.
Personnel.—Consultants and Specialists; Officers engaged in Communal Services; Dental Surgeons; Workers in ancillary services.

D. SUPPLEMENTARY SERVICES—including Provision for facilities for specialized treatment of such conditions as tuberculosis, mental disease, etc.
Personnel. — Specialists in the appropriate forms of treatment; Workers in ancillary services.

E. TEACHING HOSPITALS WITH MEDICAL SCHOOLS — including facilities for treatment of cases of unusual difficulty; Facilities for Research; Facilities for Post-Graduate Study (including training for Communal Services).
Personnel.—Consultant, Teaching and Research Staff; Workers in ancillary services.

F. and G. RESEARCH: CLINICAL RECORDS.
It is recommended that provision should be included in any scheme for (F) the encouragement of research, and (G) the operation of a system of standardized clinical records.

H, I, and K.—ADMINISTRATION.
Recommendations as to the principles of administration are submitted; H, The establishment of a single Health Authority to supervise the local administration of all medical and allied services, whether curative or preventive. I, Representation of the medical profession on each such authority. K, Establishment of Local Medical Advisory Councils.

SECONDARY HEALTH CENTRES.

Secondary health centres must be situated in towns where adequate equipment and an efficient staff of consultants and specialists exist, and to which means of communication are convenient. The secondary, like the primary health centres, would have both a preventive and a curative side. On the latter their services would mainly be consultative; they would receive cases referred from the primary centres for diagnosis or special treatment. It is recognized that in some towns it would be necessary that primary services also should be rendered at the secondary health centres. The equipment of a secondary health centre would provide general services (medicine and surgery), and special services of midwifery and gynaecology, ophthalmology, laryngology rhinology and otology, dermatology, genito-urinary surgery, orthopaedics, and dentistry, and for radiology, electrotherapy, hydrotherapy, physical culture, massage, and nursing. They would possess also fully equipped pathological laboratories.

Existing institutions would form the nucleus for the curative services of secondary health centres, but as their functions were extended present buildings would not be large enough. Their accommodation might in many instances be supplemented by linking them with existing Poor Law infirmaries, the beds in the allied institutions forming one field of work for an associated medical staff. It is considered, however, that in many areas it would be necessary to establish complete and model secondary health centres, and that where possible they should be built on open ground just outside the town. Patients referred from the primary centres would either attend the out-patient clinic of the secondary centre or be admitted as in-patients. The medical staff of the secondary centre would be responsible for their treatment, and every facility would be afforded to general practitioners to keep in touch with their patients while they were attending the centre, and to resume their supervision on discharge. The clinical consultants at the secondary health centres would attend out-patient clinics regularly to see cases referred to them, would attend the referred cases in the wards, would pay periodical visits to the primary health centres allotted to them, and would be available to make special visits of emergency in consultation with general practitioners to the primary centre, or, if necessary, to the home of the patient. These consultants would be paid on a part-time basis, with extra fees for special visits. The non-clinical consultants—pathologists, radiologists and the officers connected with the communal and preventive services of the secondary health centres—some of whom would be whole-time officers, would also visit in a consultant capacity the primary health centres allotted. The members of the consultant services would in practice be on the staff of the hospital or the institutions associated with it; they would be appointed on the recommendation of a committee of selection, representing the medical profession of the locality, the health authority, the hospitals themselves, and the medical faculty of the university within whose sphere of influence the secondary health centre was. To be eligible for such an appointment the applicant must produce evidence of special training and experience, such as would be afforded by (1) special academic distinction and post-graduate study; (2) tenure of hospital and other appointments affording special opportunities for acquiring experience; and (3) local professional recognition of competence in a consultative or expert capacity. It is intended that general practitioners shall be eligible for these posts, and it is considered that their representation in the consultant services and on the staffs of the secondary health centres would be an advantage.

PAYING WARDS.

The report expresses the view that it would probably be advisable to provide private self-supporting wards at health centres. The reasons given are, first, that the plan would be conducive to efficient and economic working, and, secondly, that the more the serious cases are limited to one place the more time is a doctor able to spend in caring for them and the less in travelling. The essential services in the public and private wards would be identical. The charges in these private wards would vary according to the accommodation and local conditions.

PAYMENTS AT HEALTH CENTRES.

The report does not advise that curative services should be provided by the health authority free of charge. Illness, it is said, is a direct and personal concern, and the patient should contribute in some form or another to the cost of cure; experience shows that he is willing to do so. He could contribute only a portion of the cost, for efficient treatment will often be beyond the means of most citizens to provide in its entirety. It is recommended that standard charges should be fixed for treatment in the public wards and other curative services, but it is recognized that the charge might vary in different parts of the country. It is suggested that the charges would usually be met by some method of insurance, though private patients recommended by their doctors would have a right to avail themselves of the services by direct payment.

The standard rate of payment at a primary health centre would include residence, food, and nursing, but not medical attendance. At the secondary centre, acting in its consultant capacity, the charge would include medical attendance, and would be defrayed by moneys allotted to such services. The patient would possess the right of selecting the consultants and specialists assisting in his treatment, and in the secondary centre would be entitled to request additional advice from a consultant or specialist of his selection, the patient being responsible for the fee.

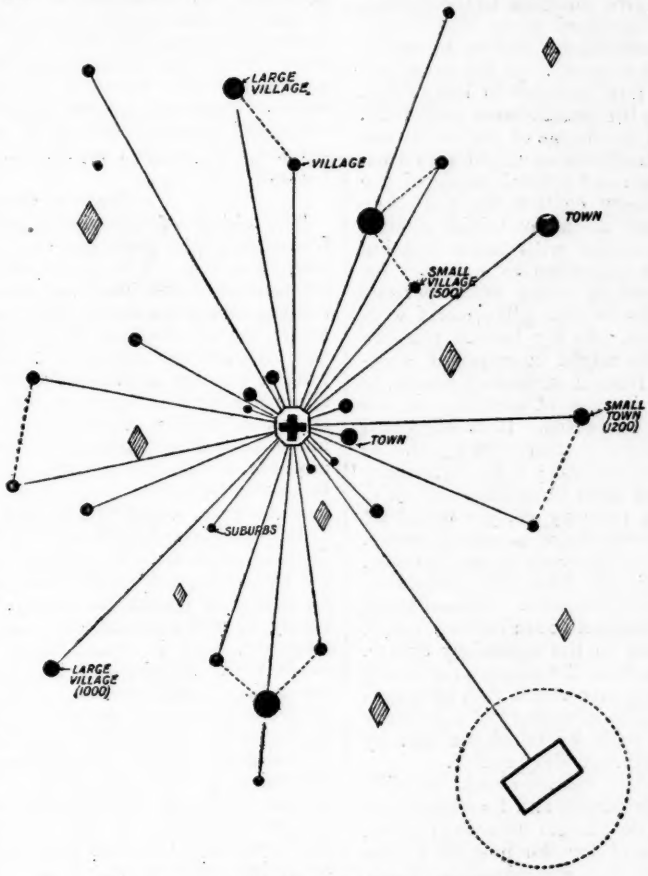


DIAGRAM OF AN AREA SHOWING HEALTH SERVICES.

The rectangle within a dotted circle indicates a teaching hospital with medical school; the black cross within an octagon, a secondary health centre; the black circles, primary health centres; the diamond-shaped figures, supplementary services.

SUPPLEMENTARY SERVICES.

It is proposed that certain institutional services should be correlated with both primary and secondary health centres; as examples of these supplementary services the following are indicated: Sanatoriums for tuberculosis; recuperative centres (convalescent centres); hospitals for curable and incurable mental disease; institutions for the feeble-minded; epileptic colonies; orthopaedic centres; hospitals for certain infectious diseases.

VOLUNTARY HOSPITALS.

It is considered that the nucleus of a health centre, especially in a town, will be the existing voluntary hospital. The incomes of these hospitals are less and less commensurate with their needs, owing to the increased complexity of equipment now required, so that a patient to-day costs twice as much as a patient twenty years ago. The opinion is expressed that grants for equipment and maintenance of communal clinics would, with the payments already mentioned for admission of patients, bring much-needed assistance to voluntary hospitals without interfering unduly with their management.

MEDICAL SCHOOL HOSPITALS.

Where possible every secondary centre should be brought into relation with a teaching hospital; the academic influence and the spirit of inquiry and progress associated with such a hospital would permeate the system of secondary, primary, and domiciliary services within the allotted sphere of influence of the school or hospital. It would receive cases of unusual difficulty requiring specialized knowledge and equipment, and its laboratories and special departments would be a court of reference.

THE HEALTH AUTHORITY.

In the section of the report dealing with administration it is advised that a new type of health authority is needed to bring about unity of local control for all health services, both curative and preventive, and to ensure continuity of idea and purpose and a complete system of reciprocal communication between the associated teaching hospitals, secondary centres, primary centres, and all domiciliary services, whether in town or country. The Council states that it has not been able to arrive at any final opinion on the question whether the new health authority should be an independent body set up for the purpose of administering health services alone or whether it should be a statutory committee of an existing local authority. It is, however, laid down that the success of the health service will depend upon the co-operation of the medical profession, so that its members must play a responsible part in the administration of the health authority. It is therefore recommended that the medical profession should be represented on the new health authority, and that a local medical advisory council should be associated with each such authority. It is recommended that the members of the authority should, as to two-fifths, be medical representatives nominated by the local Medical Advisory Council and other persons specially skilled in health questions; the other three-fifths of the authority would be representatives elected by popular vote.

The local Medical Advisory Council, it is recommended, should consist of ten to twenty members, according to the needs of the area. The members of this council would be elected periodically by and from among all the registered practitioners resident in the area by means of a postal vote conducted by the Health Authority. The principal medical officer and the two chief assistant medical officers would be *ex officio* members of the advisory council. The council should have power, for special purposes, to appoint committees, which would have the right to co-opt persons specially skilled in the subject under consideration. The Health Authority would be expected to invite the advice of the local Medical Advisory Council, which would be in a position to act as a medium for communicating to the Health Authority the collective opinion of the practitioners in the area.

MEDICAL OFFICERS OF THE HEALTH AUTHORITY.

The duties and responsibilities of the chief medical officer to the Health Authority would be more extensive than those possessed by existing medical officers of health, and it is therefore proposed that he should be called the Principal Medical Officer. He would be the administrative head of the medical services in the area of the authority and would have two chief assistant medical officers, the one specially concerned with the administration of the curative, and the other more especially with the preventive service. Under these would be assistant medical officers, their number varying with the size and needs of the area concerned. On the staff of the Principal Medical Officer would be the principal dental officer, principal matron, and so on.

LABORATORIES.

A sketch is given of a scheme for laboratory services. The first and essential function of the laboratory at a primary centre would be to give facilities to the general practitioner; it would be so equipped as to enable him personally to make any examinations he desires to undertake. The equipment would be supplied from the secondary centre and adapted to meet any increase in knowledge, skill, and interest displayed by the practitioners concerned. Some person must be placed in charge of such a laboratory; it is thought that his qualifications might vary with the size, geographical situation, and special needs of the centre. At the smaller primary centres the part-time services of a moderately skilled attendant might suffice; at larger primary centres persons with more training should be provided, and it is suggested as a matter for consideration whether, in certain cases, such persons might not combine the duties of the pharmacist with those of the laboratory worker. At the largest primary centres two laboratory workers might be required, especially at centres far remote from a secondary centre, to report, at least provisionally in case of urgency, as, for instance, when diphtheria is suspected. It is suggested that the laboratory workers at the primary centres should spend occasional periods in the laboratory of the secondary centre, for the improvement of their knowledge and skill. The responsibility for staffing primary centres would lie with the director of the laboratory of the secondary centre. In case of emergency, as on the outbreak of an epidemic, it would be possible to concentrate laboratory assistance in the locality by the transfer of workers. Certain types of work, as for instance histological examinations, might as a matter of routine be sent to the secondary centre. When materials must be taken from the patient, especially when quantitative methods are involved, a visit by a consultant might be necessary. The laboratory of a primary centre must be in communication by telephone and by motor transport with the related secondary centre.

The laboratory of a secondary centre should provide ample accommodation and equipment, and its senior staff should be highly qualified to do clinical laboratory work, both for the primary centre and for the hospital of the secondary centre; it would also do post-graduate teaching. The head of the laboratory would be a well qualified pathologist, and the staff would comprise specialists in morbid anatomy, bacteriology, and pathological chemistry. Some of the assistants would be preparing for the higher posts in the service; others, in an intermediate class, would furnish recruits for the staff of the primary centres.

The laboratory of the secondary centre would be linked with the chief or university centre, which would have a special laboratory for health services distinct from a professorial department, though in close contact with it. A separate health services laboratory would protect the academic staff from routine, leaving it free for teaching and fundamental research work. The staff of the health services laboratory would be recruited from that service and be dependent upon meritorious performance within it. At the same time it is recognized that no rigid barrier should be erected between the academic pathologist and those engaged in the health services. Though there would be two distinct careers circumstances would often cause individuals to pass from one to the other.

The health services laboratory of a university centre, in addition to the routine work, would carry out the more difficult investigations referred to it from the subsidiary centres, but it might also undertake much of the routine work for the university hospital. The director of such a laboratory would rank with a university professor, but would usually be a distinguished pathologist with tastes inclined to organization and administration rather than teaching.

RESEARCH.

With regard to research, it is suggested that the organization throughout the proposed health service would facilitate inquiry into the causes of disease. It is suggested that the facts showing the need for inquiry might often be brought together in the first place by the medical practitioners in a locality; the manner in which it should be further prosecuted would depend upon the subject, but research into fundamental problems would still continue to be conducted through the university and the Medical Research Council. A national organization of laboratories in touch with every branch of the health services would, it is believed, provide opportunity for systematic investigation and team work. The director of the health services laboratory at the university centre would be in a position to start machinery for the intensive investigation of any urgent problem, and with the goodwill of the general practitioners the investigation would include cases never available in the wards of a hospital. In particular, the earliest stages of disease might be made the subject of organized research, which, it is hoped, might be subsidized and perhaps supervised by the Medical Research Council.

DENTAL SERVICES.

The object of dental treatment is to secure normal formation of the jaws and dental arches and a clean and healthy mouth. While many of the impediments to the attainment of this ideal are to be found in pre-natal conditions, others are due to the environment of early childhood; the ill effects of dental disease and oral sepsis in adult life are well recognized. As dental treatment, therefore, comes into close relation with medical care, a dental clinic should form part of every primary health centre. It would provide ordinary treatment for young children under school age, school children, expectant and nursing mothers, and for the adult population generally. It would be staffed by one or more dental visiting surgeons, and a dental service would be attached to each centre.

At secondary health centres there would be similar dental clinics, but on a larger scale, especially as regards the fitting of artificial dentures, which would be made in an attached dental laboratory. Its staff would consist partly of part-time officers and partly of visiting dental surgeons, and it would have a staff of nurses and mechanics. Members of the dental staff would act as consulting dental surgeons at the primary centres, to which they would pay periodic visits. Arrangements should be made for the dental treatment of all persons admitted to convalescent homes, sanatoriums, and other institutions belonging to the supplementary services. All forms of dental treatment provided at the clinics of the primary and secondary health centres would be regarded as part of the necessary medical treatment, and would be arranged on an insurance basis or according to a scale of fees. The remuneration of dental surgeons would be on a time basis, and it is suggested that arrangements might be made to use the clinics for private patients. The payment of dental surgeons for consultations would be on the same basis as that of other consultants.

MATERNITY AND CHILD WELFARE.

It is the intention of the Council to appoint a committee to consider details of maternity and child welfare services, but the report contains an outline of what it is considered should be provided. The services would be domiciliary and institutional, the latter being given in primary and secondary health centres and teaching hospitals.

The domiciliary treatment would include advice and treatment for pregnant women unable to attend the health centre, and provision for attendance at the labour at the woman's home. A doctor and a midwife should be available for every labour, and also when necessary an anaesthetist. A midwife trained to know when a doctor is needed would attend natural labours, and it is suggested that additional assistance might be obtained from a service of home helps, exercising carefully defined functions and working under proper supervision. Sterilized maternity outfits should be obtainable from a primary health centre, and a practitioner should be able to

summon an expert obstetrician with the necessary assistance and outfit in a case of difficult labour. The service should also include the supervision at the home of the welfare of mother and infant and any necessary medical attendance, should the mother be unable to attend at the primary health centre.

The institutional treatment provided at the primary health centre should include beds for labour and after-care and arrangements for isolating any case of sepsis after delivery. The number of beds available for ante-natal, maternity, and post-natal cases would at first be limited, but should be increased by adding to the centre or by a separate institution, should the demand arise. The services of a consultant from a secondary centre would be available. Women suffering from gynaecological disorders, the result of child-bearing, would either be admitted to the wards of a primary health centre or sent to the secondary centre, being treated as in-patients or out-patients, as the practitioner might determine. The residential accommodation should make it possible for mothers to be accompanied by their infants, and an infant welfare department should be part of the primary centre.

Standardized Clinical Records.

It is proposed that a uniform system of records of illness should be established and filed on the card index method. At the primary health centres they would be simple to avoid an undue tax upon the staff, but at the secondary health centres and teaching hospitals the aim would be to have a complete record, clinical, pathological, and communal. When a patient was transferred from one centre to another a copy of the record would accompany him. It is advised that an officer should be appointed at each secondary health centre and teaching hospital to take charge of the records, which it is believed would be very valuable for research into the nature of disease and the results of treatment. General direction would be in the hands of the teaching hospital, subject to the final control of the Ministry of Health in consultation with the Medical Research Council.

Physical Culture.

After reference to the policy of the Board of Education with regard to physical education in the schools, the Consultative Council expresses the opinion that every community should possess grounds for physical training, provided and maintained at the public expense, and so planned as to meet the needs of children, adolescents, and adults. It is recommended that a doctor specially skilled in the subject should be attached to each secondary health centre to supervise the work and training of masseurs and masseuses, and to act as consultant and adviser throughout the area. It is pointed out that though at present there is provision for the training of women, there is no training college for men. The Council proposes to set up a committee to consider this question of physical culture.

Recuperative Centres.

The establishment of recuperative centres is advised to serve the double purpose of restoring persons to health, either after illness or before their ill health has become disease. Such institutions are declared to be essential to any scheme of medical service, and would, it is said, be a great field for preventive medicine and for the study of the early manifestations of disease. The site should be sufficiently large and in an open situation, but elaborate buildings would not be required. It is pointed out that the experience of the Army Medical Service during the war in the establishment and conduct of convalescent and rest camps will be of great value to the civilian organization proposed.

Prefatory Note by the Minister of Health.

The following is the text of a note prefixed to the Report by the Minister of Health:

"1. This Report, the first to be received from the Consultative Council on Medical and Allied Services established under the Ministry of Health Act, 1919, is published in order to facilitate discussion of the questions raised in it.

"2. Action is being taken by the Minister of Health and the local authorities in relation to a number of matters touched upon in the Report; and proposals for action in other directions are in process of formulation.

"3. Many of the Council's recommendations must necessarily be considered in relation to a comprehensive policy for the extension and development of health services (including the question of the future administration of services at present entrusted to Poor Law authorities), which will be submitted to Parliament by the Government in due course.

May, 1920. C. Addison."

MEDICINE AND THE STATE.

THE PRESIDENTIAL ADDRESS TO THE SECTION OF STATE MEDICINE IN THE BRUSSELS CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH, MAY, 1920.

BY

THE RIGHT HON. LORD DAWSON OF PENN, G.C.V.O., K.C.M.G., C.B., M.D., F.R.C.P.

It is a convenient opportunity to pass briefly under review the relations of the medical profession to the State. These relations have undergone considerable changes during the last ten years, owing to a growing sense of the importance of health and the responsibility of the State thereto. This has led to a considerable extension of the activities of the State, and chiefly into the domain of curative medicine, and these extensions have been made one by one in answer to specific public need or demand rather than in accordance with any predetermined policy. There is further in contemplation the systematic provision of medical services for the use of all members of the community. I am omitting reference, for my present purpose, to either the public health service with its high and ever-growing reputation, or to the Poor Law, which by common consent should be superseded as unsound in principle and ineffective in application.

In 1912 the State, through the machinery of the Insurance Act, made organized provision for the medical care of three-quarters of the heads of families in the country, and, for the purpose of such treatment, supplements the contributions of the insured persons to the extent of over five millions annually in England alone. These rights are confined to manual workers and to persons earning not more than £250 per year—that is, they are determined by the occupation and the economic position of the patient. In other words, it is a service open to a limited class for all ordinary illnesses.

But the State is further providing, step by step, for a growing list of illnesses and disabilities, such provision being open to all citizens, irrespective of their economic position. To mention examples. It is the duty of the Local Education Authority to inspect medically and provide medical treatment for the children in elementary and continuation schools, and it is empowered to set up clinics and provide doctors, dentists, and nurses for this purpose. The local authority (county or county borough council) is responsible for the diagnosis and free treatment of tuberculosis; under the Act of 1917 it may provide clinics for the free treatment of venereal disease, and may pay for the travelling expenses of patients.

The latest example is furnished by the Maternity and Child Welfare Act of 1918, whereby the local sanitary authority is empowered to maintain maternity and child welfare centres, maternity homes and hospitals, and convalescent accommodation with the necessary provision of doctors and nurses and health visitors for both mothers and infants. It is easy to see that extension of these *ad hoc* services would soon embrace a large part of medical practice. It is a State medical service by instalments, almost by stealth, and before we go further it would be well to take stock of the position, and define our policy.

Underlying both these types of provision of medical services is the public opinion that the health of the people, like the education of the people, is of supreme importance to the State; that the best means of maintaining health and curing disease should be made available to all citizens; that such means need to be organized and distributed according to the needs of the community; and further, that the cost, being beyond the capacity of most citizens to provide, must be partly or wholly borne by public funds.

The first of the above organizations—namely, that of

the Insurance Act—is open to a limited class for all ordinary illnesses; and the second to all classes for *some* illnesses. As regards cost the first is contributory, and the second is free. In their functions they overlap; in their local administration they are disunited.

How far does each of them afford guidance for the development of medical services in the future?

With regard to what I may call the *ad hoc* services—such as those for maternity, school children, tubercle, venereal disease, etc.,—these have the advantage of being adequately provided both in fabric and in personnel, but as at present constituted they are isolated units of effort, tending to be aloof from the medical practice and doctors of their district. It is a most important principle that the health services of a district should, wherever possible, be staffed on a part-time basis by the doctors practising in that district. The more the general practitioner is identified with the health of his community, and the more, through him, the correlation of preventive and curative medicine is realized, the better for the public interest. The staffing of these services by whole-time specialists narrows the scope of the general practitioner's work and discourages his ambitions, for it cannot be too much emphasized that to get good men one must provide good work.

The Insurance Act brings medical attendance within the reach of large masses of the population, and maintains freedom (of choice) for both doctor and patient. Its organization is widely distributed, but its service is restricted to certain classes of the community, is exclusively domiciliary, and is devoid of the complete equipment of both personnel and material necessary to that efficient service which the doctors desire to give and the public should receive. This is no criticism against insurance as such, but against its existing imperfections.

Seeing that some system of insurance is the only practicable alternative to entirely free provision of all medical services, there is no general desire on the part of either the public or the medical profession to destroy the present insurance organization, under which over 80 per cent. of the doctors of the country are doing medical service. There is, however, a strong desire to remedy its defects and extend its provisions.

Surely the wise course is to fit and mould the insurance organization into the larger scheme of systematized medical service, which, if the health of the people is to be secured, must be set up and made available for all sections of the community. Just as education requires schools and colleges, as well as teachers, so does the health of the people require clinics, hospitals, laboratories, and such like provision, as well as doctors, distributed according to the population and its needs.

But the parallel between education and health cannot be carried further, and therein lie many of the difficulties in health administration. The teacher is a salaried official, and his sphere of work and his pupils are allotted to him.

The problem of health provision is more complex, in that the people who have to be provided for are of all ages, are sick, and in large measure require individual attention in their homes as distinct from collective attention in institutions. Education is concerned with healthy youth, which is still under external control, though even here it is no uncommon experience to find a pupil who learns under one master while failing to learn under another, owing to some temperamental antagonism.

The sick person is intensely individual, and requires, besides knowledge, the support and confidence which comes from temperamental harmony between doctor and patient. From the point of view, therefore, of the patient, the voluntary association between him and his doctor should not be lightly put aside. It is a privilege highly valued by the people, as shown by the widespread demand for free choice of doctor.

Moreover, this voluntary association is of equal importance to the doctor and his work. It stimulates effort, encourages initiative, and the taking of responsibility. If a patient is allotted to a doctor under a State service, there is loss of the stimulating force of rivalry; responsibility is apt to be transferred rather than undertaken, and advancement is as likely to follow seniority and genial flexibility as efficiency and enterprise.

Another difficult question is, whether health services should be entirely free or partly paid for. Let us not begin by trying to make everything free; we may easily get something stereotyped and shoddy if we do. An early attempt to make everything free would cause much strain on public funds, reaction would follow, and so starvation and inefficiency of the services would ensue.

Why not let a tariff of charges be fixed for various kinds of services? Experience shows that the people are far from unwilling to contribute towards treatment of their illnesses. What they want to get rid of is the idea of charity associated with health institutions.

In practice, systems of insurance will most often secure the cost—not individual payments; and no doubt when an organized health service has been set up by public authority, the insurance companies of high standing will institute policies for health and against sickness, of which the middle classes will largely avail themselves. Those who are in misfortune, and devoid of means, could be paid for by charitable or public funds.

The foregoing remarks apply chiefly to curative services. With many preventive services the advantages to be received are more contingent and less obvious, and therefore would be unwillingly paid for, and consequently evaded. Such services should be free.

As regards payments to doctors, disturb the present system as little as possible, and leave the relation between doctor and patient free. If medical services are to be made available to all citizens, new and extended organization will be required, and all such health services will need to be administered by one local health authority in each area. On this authority the medical profession, as such, should be represented. Its responsible connexion with the administration will give to that administration the skilled guidance necessary to success, and ensure the confidence of the doctors as well as the public.

The principle of strengthening local governing bodies by adding to their membership non-elective or indirectly elected elements, has been adopted for many years, and in recent times has been employed to secure to the community the advantage of expert advice. For example, in the case of education the local authority was required to include in its Education Committee a minority of co-opted members skilled in education.

It is obvious that with the increase of knowledge, and especially with matters so technical as those connected with medicine, expert representation on the health authority is essential to efficiency. The majority of such expert members would be medical men, who would advantageously be nominated by the doctors resident in the district concerned. This plan has a precedent under the Scottish Education Act of 1918.

The responsible association of the medical profession with the health of the community would be productive of nothing but good. It would bring to health administration throughout the country the skilled knowledge necessary to sound judgement. On the other hand, it would strengthen the corporate life of the profession, increase its power of collective expression, and develop its civic sense.

The bringing of the knowledge of skilled callings to the aid of Government has shown further development in recent years by attaching advisory bodies to central administrations. Such bodies have been set up by statute in connexion with the Board of Education, the Ministry of Agriculture, and, more recently, the Ministry of Transport.

The Ministry of Transport Act, 1919, directs that certain advisory committees *shall* be set up; it prescribes a procedure which aims at making these committees representative, independent, and influential. In illustration the following paragraphs may be quoted:

> 1. For the purpose of giving advice and assistance to the Minister with respect to and for safeguarding any interests affected by the exercise of the powers and the performance of his duties under this Act in relation to roads, bridges, and vehicles and traffic thereon, a committee (hereinafter referred to as Roads Committee) shall be appointed.
>
> 2. The Roads Committee shall consist of not less than eleven members, of whom five shall be representative of highway authorities, appointed after consultation with such authorities, and five shall be representative of the users of horse and mechanical road traffic, appointed after consultation with the interests concerned, and one shall be a representative of labour appointed after consultation with the interests concerned.

The Act of Parliament which constituted the Ministry of Health approved and made provision for such advisory councils. "The Consultative Council on Medical and Allied Services" was constituted by the Minister to

represent as much as possible varieties of knowledge and experience, and in selecting the members the Minister asked advice of representative bodies in the medical profession.

The selection of the members of an advisory council presents difficulties. To be useful the size of the council must be limited, and the members must not only be individually suitable, but must form a good team. Direct election by all qualified practitioners would not secure an efficient council, and some method of indirect election or nomination would appear to be most appropriate.

The method of selection of the council and its representative character might at a later stage be improved, but the actual form the council has taken is of less importance than the principle it embodies. Such a consultative council attached to the Minister has within its proper sphere real power for good. It brings to the administration, in a responsible way, the views of the profession outside, and has the power to initiate advice. It is the principle of vocational representation applied to administration.

The usefulness of the Consultative Medical Council will depend on a comprehension of its proper functions. It should be acquainted with the lines of policy pursued by the Ministry, and have opportunity to influence that policy. Its chairman should be in the inner counsels of the Ministry, and be a member of all important departmental conferences which are concerned with policy rather than details of administration. Such co-operation between the Consultative Medical Council and the administrative staff should be of mutual advantage, and it need hardly be said that the ultimate responsibility for decisions would always rest with the Minister.

As the provision of medical service extends, the Ministry of Health will have increasing control over medical policy, and therefore over the medical profession, and this influence will be enhanced by the power of the purse. It is undesirable that the centre of gravity of a learned profession should be in a Government department, and the application of the principle of vocational representation would be a counterpoise to this tendency. Professions, like nations, have need of self-determination.

Reverting, in conclusion, to the general aspect of this question, the growing recognition of the necessity and desirability of vocations being represented in the spheres of government and administration is no doubt due to the increased range and technicality of the knowledge on which they are based, and to the advantage of securing the confidence of the members of the calling concerned. No body of departmental advisers, however able, could alone envisage all the problems which arise, and their bearing on different interests concerned. The supplementary information and advice of responsible advisory councils cannot fail to be advantageous, and would, if needful, be a useful corrective to bureaucratic tendencies. Vocational representation is, I venture to think, likely to play an increasingly important part in Government.

THE MANCHESTER RADIUM INSTITUTE.

RESULTS IN CANCER.

THE report by Dr. Arthur Burrows of the Manchester and District Radium Institute for 1919 deals generally with the 677 cases treated during the year, but lays special stress upon the radium treatment of cancer of the mouth and carcinoma of the cervix of the uterus.

Dr. Burrows states that hitherto radium therapy of carcinoma of the tongue, floor of the mouth, fauces, soft and hard palate, tonsils, and pharynx, has been looked upon as unsatisfactory. Until recently it was often doubted whether this treatment was worth while attempting. In discussing the general conditions known to be adverse to successful radium treatment it is said that as regards the mouth these include: (1) Large tumours with extensive infiltration; (2) deficient blood supply which produces a tendency to sloughing and ulceration; (3) the frequent involvement of bone; (4) the tendency to rapid dissemination; (5) the persistent purulent and inflammatory condition, usually a septic reaction, which sometimes follows the application of radium. In reviewing the conditions in which radium is often used, the report reads as follows:

The conditions which respond best to radium treatment are rodent ulcer, carcinoma of the skin, carcinoma of the breast, carcinoma of the cervix of the uterus, carcinoma of the body of the uterus, endothelioma of the parotid gland, and sarcoma of the nasopharynx; a noteworthy feature being (with two exceptions) "accessibility." It would almost seem as if carcinoma of the cervix of the uterus is particularly responsive, as good results are reported from many varying methods of application. Examples of those growths which do not respond well as a rule are carcinoma of the rectum, melanotic sarcoma, and carcinoma of the mouth. Certain conditions, such as cancer of the larynx, oesophagus, and bowel, suffer markedly from the evil of inaccessibility.

The disappointments hitherto met with in cancer of the mouth have been so great that in many instances patients have been advised that radium treatment is inapplicable and useless. In view of this report and the results obtained by Dr. Burrows with the latest method the position needs reconsideration. To quote again:

The technique is as follows: After boiling one or more capillary emanation tubes of a strength of two to eight millicuries, the number of tubes varying with the size of the tumour, they are introduced into the growth by means of a large exploring syringe needle and stilette. The distance between them must never be less than one centimetre, nor must they be placed near to healthy tissue or bone, otherwise a painful reaction will follow. No attempt is made to remove the tubes unless one projects and is uncomfortable, when it may be taken out twenty-four hours or more after the application. To prevent sepsis the mouth should be cleansed before the application. If the rules for avoiding healthy tissue and bone are observed, a practically painless reaction will often follow. If adequate dosage is employed, it may not be necessary to give a second application, and, as a rule, in successful cases two or three is a maximum number. The three desiderata are therefore: (1) A method of application of radium to which cancer of the mouth is susceptible; (2) a treatment which needs little repetition and may be painless; (3) the element of sepsis is diminished or may not be of much account.

Following on this the question of the treatment of metastases is discussed. Glands with some mobility or a good blood supply, if not too large, may be treated by burying, for six to forty-eight hours, emanation tubes of 10 to 25 millicuries, screened by three-tenths of a millimetre of platinum or seven-tenths of silver; in addition, tubes should be buried along the course of the cervical lymphatics. Further, it is suggested that the neck area should be irradiated repeatedly from the outside by either radium or x rays. In cases in which very large or ill-nourished masses are present, too small a dose may produce no effect, and too large a dose sloughing, without any ultimate benefit to the patient; that is to say, no good result follows on the use of radium only. In such cases the only hope, and that a slight one, is to remove surgically, so far as can be safely done, the main or central mass of the tumour and treat the growth remaining by burying radium tubes in it. Among the cases related in the report are the following:

A male with a twelve months' history presented himself with a flat growth occupying the posterior two-thirds of the left side of the tongue, nodular and ulcerated. There was considerable induration, but no enlarged glands. Microscopically the growth was found to be carcinoma. In March, 1919, six unscreened emanation tubes, each of a strength of 2.5 millicuries, were buried in the growth. The reaction was practically painless. In the beginning of May the tumour was considerably smaller and flatter, and the improvement continued for some time. In July eight more unscreened emanation tubes, each of a strength of 2 millicuries, were inserted in the tumour. The reaction was again painless, and after it had passed off no growth could be palpated, but some scar thickening remained. The patient has remained in the same condition until the present time—a period of five months.

A second case had had a portion of the tongue removed for carcinoma in October, 1918. In March, 1919, he had a soft fungating swelling along the left side of the jaw with induration beneath. It was adherent to the jaw. No glands were palpable. Five unscreened emanation tubes, each of a strength of 3 millicuries, were buried in the tumour. The reaction was very severe, and the patient had much pain, with a considerable amount of sloughing. The jaw remained painful till July. In December, 1919, the pain had gone, and the patient was well, and no sign of growth could be found.

These cases are typical of those quoted in the report, and indicate the lines on which the treatment is being carried out and developed, and the results which are being obtained. The methods appear to be a distinct step forward in the treatment of an extremely unpromising condition. The report includes a description, illustrated by drawings, of the radium emanation plant, and this part concludes with a series of tables classifying the cases and the results.

British Medical Journal.

SATURDAY, MAY 29TH, 1920.

THE REPORT OF THE CONSULTATIVE COUNCIL.

THE anxiously expected report of the Medical Consultative Council of the Ministry of Health has been published this day (May 28th). The Council when appointed last October was instructed to draft a scheme for the systematized provision of the medical services which should be available for the inhabitants of a given area, but the document now issued is described as an interim report, for it was felt that certain questions raised could not be answered without instituting special inquiries.[1] As it stands, however, the report is something more than a sketch, and the application of its recommendations would have a profound effect on the future of medicine in England.

The suggestion to establish a whole-time salaried service was considered, but rejected, because "by its adoption the public would be serious losers." Under the plan proposed the general practitioner would retain all the liberty he now possesses, his facilities for doing good work would be increased, and he would not, save in the case of certain special posts, be a salaried officer. On the other hand, the members of the staffs of the general hospitals would become part-time, or, in some instances, whole-time salaried officers paid out of public funds. Each of the new health authorities would have in its area, which we may think of as a county, a number of whole-time salaried officers, a principal medical officer, two chief assistant medical officers—the one to look after the curative and the other the preventive work—a staff of assistant medical officers, a principal dental officer, and a principal matron. Medicine would not be "established" like the Church, but would have a new hierarchy.

The general features of the scheme propounded are easily understood, and can be seen at a glance in the diagram reproduced at page 741. In a conveniently situated town in the area of a health authority would be a "secondary health centre," consisting of a fully equipped general hospital, with annexes on suitable sites for special classes of cases. Linked to this centre would be a series of "primary health centres" in small towns or villages, or in suburbs. The staff of these outpost institutions would consist of the general practitioners of the neighbourhood. They would have the right to claim the assistance, in consultation, of the members of the staff of the secondary centre, and to transfer to that centre such patients as they considered to be in need of its more elaborate equipment.

The cost of the application of such a plan as this is not discussed, and it is to be gathered both from what the report contains and what it omits that the Council considered that it would best fulfil its duties by putting forward an ideal, and we are authorized to say that it has striven to develop this ideal without greater disturbance of existing machinery than was deemed necessary. Looked at from this point of view we may regard the primary health centres of the report as corresponding to existing cottage hospitals, and the secondary health centres as the equivalent of the voluntary general hospitals without teaching schools. From the detailed analysis of the report given at p. 739, it will be seen that the Consultative Council contemplates a great development of primary health centres. To start the scheme it is proposed to utilize existing cottage hospitals extended as necessary, and to bring into it such poor law infirmaries, and it may be assumed such sick wards of workhouses, as may be found suitable when the promised abolition of the poor law system is realized.

The report agrees with the Ministry of Health Committee of the British Medical Association that general practitioner domiciliary attendance and treatment is the only foundation on which any systematic provision of other kinds of treatment can properly be based; it agrees also as to the importance of providing dental treatment, such ancillary services as those afforded by nurses and midwives, an opportunity for obtaining the opinion of consultants and specialists, and in the primary or local health centres beds for institutional treatment and laboratory facilities. Shortly, it may be said that the Council and the Committee agree that the general practitioner should have not only greater facilities for treating his patients under the best conditions, but also for contributing to the progress of knowledge. This he would be able to do through the laboratory and other facilities to be provided, but, as we gather, mainly by being able to keep in touch with such patients as he may refer, for consultation or treatment, to the secondary centres and the teaching hospitals. He would be the person to decide that a patient should be so referred, and the patient on leaving the hospital would return to his care. The Council recommends that in all this he should be assisted by a careful system of clinical records, begun by himself and carried through by the various institutions to which the patient might go.

The primary health centre would contain wards of various sizes, with a nursing staff and provision for midwifery; it would provide also clinics properly equipped, in which doctors could see their patients and consult with each other; it is considered that the custom whereby each practitioner has his consulting room in his own house should be continued, but it is recommended that where a doctor cannot provide adequate accommodation at his own expense, as in certain congested areas, the Health Authority should have power, after consultation with the local Medical Advisory Council, to provide such accommodation at the primary health centre. It is said, also, that where local conditions and medical opinion favour the plan, collective surgeries might be tried, either attached to a primary health centre or set up elsewhere. On this point there would seem to be difference of opinion between the Consultative Council and the Committee of the British Medical Association, as the latter has deprecated the establishment of general practitioner clinics "under the ægis of the State."

Communal services, by which is to be understood such services as those already provided for pre-natal care and child welfare, inspection and treatment of school children, tuberculosis, and physical culture, would be conducted in or from the primary centre, and each communal service would be directed by a doctor practising in the area who had specially qualified himself for the post. These directorships would be part-time posts.

Primary health centres would vary in size: in addition to a dispensary and laboratory to be provided everywhere, a complete centre would have equipment for radiography and electricity, and a staff for massage and electricity; such a centre would be

[1] For particulars of these and other details see page 739 *et seq.*

expected to help smaller neighbouring centres. The pathological laboratory would be a place in which the general practitioner could himself carry out or supervise simple investigations such as, to quote the instance given, the identification of the diphtheria bacillus, but many other instances might be given. The pathologists of the secondary centre would be available for consultation. A laboratory assistant, however, must be available on the spot, and the Council admits that it is difficult to decide what his qualifications should be. It intends to appoint a committee to report on this matter, but seems disposed to suggest that the pharmacist might be trained to do this work. Similar considerations would apply to radiology and electricity. The pharmacist might be trained to be a competent laboratory assistant, but a proposal to entrust him with radiology for diagnosis and treatment would be very debatable. The final opinions of the Council on these matters will be awaited with interest not unmixed with anxiety. Those most competent to judge are confident that great advantages will flow from the establishment of these outpost laboratories, and it is important to avoid an initial mistake in organization.

Proposals of far-reaching character are made with regard to the staff of secondary centres; they would consist of clinical consultants and what may be called laboratory consultants. The former would be part-time officers, paid on a time basis, with extra fees for special visits; in addition to attending, as now, the out-patient clinics and wards of the secondary centre to which they were attached they would be required to pay periodical visits to the primary health centres allotted to them, as well as special visits either to these centres or to the homes of patients in consultation with the general practitioner.

The recognition of the consultant status of the pathologists and radiologists at the secondary centre is a very commendable feature of the report. In addition to the duties ordinarily discharged by such officers now, they would pay periodical visits to the primary health centres in the area. The officers of the communal services at the secondary health centre would similarly act in a consultant capacity at the local centres. The Council agrees with the Committee of the British Medical Association that the test of eligibility to serve as consultant or specialist should be evidence of special training and experience, and the definition of such qualifications is identical with that put forward by the Committee. Finally, it is intended that the secondary centres should be related to a teaching hospital.

We do not find definite evidence in the report of an intention to limit to insured persons, as by some had been expected, the benefits that it is hoped will flow from the scheme. In the address delivered by Lord Dawson in Brussels (p. 743) he expressed the view that the wise course will be to fit the insurance organization into the larger scheme of systematized medical service which the Council he presides over has put forward. He contends that the voluntary association between the patient and doctor is highly valued by the former, and of equal importance to the doctor in his work. Certain members of the Council, we are told, were of opinion that curative services and preventive services should be provided by the health authority free of charge to every individual patient. The majority, however, considered that this course would impose too heavy a burden on public funds, and Lord Dawson, as will be seen, maintains that experience proves that the people are far from unwilling to contribute towards the cost of the treatment of their illnesses. It is recommended that standard charges should be made in the public wards and for other curative services, though the standard might vary in different parts of the country, and it is suggested that the charges would most often be met by some method of insurance, though private patients recommended by their doctors would have the right to avail themselves of these services by direct payment. It is generally agreed that the facilities for in-patient treatment at present open to the intermediate middle class are insufficient in quantity, and too often in quality, and the Council in the Section on Secondary Centres proposes that health centres should provide private wards at charges varying according to the accommodation and local conditions, the patient being responsible for medical fees. It suggests that these self-supporting wards should be "part of the fabric of health centres." The point is not free from difficulty, and separate institutions on the plan of St. Chad's Hospital at Birmingham[1] may prove a better solution of at least part of the problem.

Brief reference is made in the report to what are called supplementary services, including sanatoriums for tuberculosis, recuperative centres, orthopaedic centres, hospitals for mental disease and feeble-mindedness, epileptic colonies, and hospitals for certain infectious diseases. We would be glad to see this subject more fully developed, for we believe that it will be through such ancillary institutions that the pressure on the beds in the centres may most efficiently be relieved.

As to the constitution of the Health Authority, to which reference has already been made, the members of the Council are not in agreement; some would prefer a statutory committee of an existing local authority—presumably the county council or county borough council; others desire an independent body, elected for the purpose of administering health services alone. However constituted, the Health Authority, it is suggested, should have control of both curative and preventive services, and in order to ensure the cordial co-operation of the medical profession it is suggested that it should be represented as such on the Health Authority, and that each Health Authority should have a local Medical Advisory Council elected by and from all the registered practitioners resident in the area.

At a first glance, at any rate, it would seem that the scheme in its full symmetrical arrangement will be more easily adapted to rural counties than to industrial areas. A plan on the lines indicated has been elaborated in a part of Gloucestershire: the secondary centre is in the city of Gloucester; it is associated with the medical school hospitals in Bristol, with a series of twenty-four primary centres, and with a number of supplementary institutions in the manner indicated in the diagram reproduced on p. 741. We take it that the Consultative Council hopes that some other areas may shortly follow the example of Gloucester, so that experience may be gained of the working of such a scheme as it has outlined. The note prefixed to the report by the Minister of Health may be read in this sense; for he says that action is already being taken by the Ministry of Health and local authorities in relation to a number of matters raised in the report, and that proposals for action in other directions are in process of formation, but adds that many of the recommendations must be considered in relation to a comprehensive policy, including the future of the services at present entrusted to poor law authorities. A bill embodying such a policy is to be submitted to Parliament by the Government in due course.

[1] See BRITISH MEDICAL JOURNAL, February 21st, 1920, p. 263.

THE STEWART PRIZE.

THE Stewart Prize of the British Medical Association was awarded by the Council, at its meeting on May 19th, to Miss Harriette Chick, D.Sc. Dr. Chick, who has been an assistant in the department of experimental pathology at the Lister Institute since 1906, has published numerous papers on bacteriology and physical chemistry. Her work on the laws governing the germicidal action of chemical agents and hot water form the basis of the knowledge of the process of disinfection, and her researches upon heat-coagulation of proteins and the salting out of proteins, made in collaboration with Professor C. J. Martin, afforded an interpretation of these phenomena in terms of modern physical chemistry. Dr. Chick has also made a number of other discoveries in the chemistry of colloids, more particularly concerning proteins. Recently she has been mainly occupied in dietetic questions, with reference especially to deficiency diseases. When, towards the end of 1915, there were indications that troops in certain theatres of war were suffering from beri-beri and scurvy Dr. Chick made a study of the literature and instituted researches, the importance of which was at once appreciated by the War Office and the India Office. Dr. Chick organized and directed a band of workers at the Lister Institute, who extended the observations of Cooper, previously carried out there, on the anti-beri-beri vitamines in various foodstuffs. From a consideration of the mass of data collected and provided the military authorities were able to select the most manageable additions to the diet of troops. Starting from an observation made by Professor Fürst in 1912, to the effect that the antiscorbutic principle of fresh vegetables was developed as soon as the germination of seeds occurred, it was demonstrated that the active principle was produced in quantity sufficient to be of practical use, and that it was therefore possible to prevent scurvy amongst, for example, Indian troops, to whom, owing to military circumstances, it might be impossible to supply fresh vegetables for a considerable period. The fact that this could be done without increase of transport was of great military importance, for it was shown that dry pulses, if carried unsplit and soaked for twenty-four hours prior to cooking, germinated sufficiently to produce the accessory body. The addition of germinated pulses to the dietary was the only antiscorbutic element available to the troops at Archangel during the winter of 1918–19. It was completely successful. Observations were also made on the antiscorbutic value, weight for weight, of fresh and of dried and preserved foods, including various vegetables, fruits, eggs, milk, and meat. In this way adequate data were afforded not only for deciding on suitable additions to the diet of troops under the circumstances mentioned, but also as to the additions which might properly be made to the diet of infants reared on dried or preserved milk. In the course of the inquiry the suspicion which had arisen in recent years on epidemiological grounds, that the lime juice issued to the army was ineffective in preventing scurvy, was confirmed, and by a historical research into old Admiralty papers it was shown that the lime juice issued to the navy with good effect since the beginning of the nineteenth century was not the juice of limes but of lemons, a juice much richer in antiscorbutic principles. The information obtained during the extensive researches of Miss Chick and her colleagues has not only been of great service during the war, but is of permanent scientific value. Every fact had to be obtained by careful experiments on animals, often prolonged for five or six months. In the autumn of last year Dr. Chick, accompanied by a colleague, Miss Dalyell, went to Vienna to give assistance to the medical profession there in regulating diets, and to ascertain by observations upon the population of that unfortunate city how far the results of the experimental work on animals are applicable to mankind. Dr. Chick has been very successful in establishing friendly relations with members of the medical profession in Vienna. She has in consequence obtained every facility for study, and has been able to enlist many keen collaborators from amongst some of the prominent physicians of Vienna. This is the first occasion upon which the Stewart Prize which is awarded every two years for researches regarding the origin, spread, and prevention of epidemic disease, has been awarded to a scientific worker not a member of the medical profession, and the first time also that it has been given to a woman.

GREEK SCIENCE AND MODERN SCIENCE.

DR. CHARLES SINGER delivered his inaugural lecture as lecturer in the history of medicine in the Univerity of London on May 12th. His subject was "Greek science and modern science," and he indicated certain respects in which they were similar and certain others in which they were in contrast. Greek science, he said, might be regarded as having had its origin among the Ionian colonies in the seventh century B.C. But even the very earliest Greek writings, some of which could be referred to that date, presupposed long generations of research and careful record and observation. The self-centred character of the Greeks had often been remarked upon. Their science was the fruit of individual minds, not the product of the social consciousness. An element of Greek thought which united the Greeks to us was their conviction of the existence of order. It was the Greek faith that order reigned in Nature. This was a most vital contribution to scientific thought. Such a trust in the reign of law was due to faith or intuition, not to observation. Greek scientific workers often blundered in observation, and their besetting sin was a habit of making sweeping generalizations on inadequate evidence; but their firm faith in order was their crowning glory. From such points of similarity between ancient Greek science and that of the modern day Dr. Singer turned to certain elements which separated the two. We had nothing like the habitual inter-relation of science and philosophy which the Greeks exhibited. It was an inter-relation which originated in the historical basis of Greek science as a department of philosophy. No people were more free than the ancient Greeks from theological and social prejudices. Modern science did not arise as the offspring of philosophy, nor did it form any alliance therewith until it had gained some strength of its own. In its earliest stages modern science applied itself almost exclusively to the solution of so-called practical problems. The mediaeval limitations within which modern science was cradled undoubtedly worked far more harm than good, though there were certain elements in our science, such as specialization and practical applicability, which we owed, in part at least, to those limitations. Greek science, save in mathematics, contained an intolerable amount of speculation. A more striking difference between Greek and modern science was in technical treatment. It was sometimes said that Greek science failed because it was without instrumental aid, and thus could not reach the degree of precision of modern science. But this begged the question. Why had the Greeks no instruments of precision? Instruments of precision were the product of scientific discussion. Modern science found its expression in the periodical issue of memoirs on special subjects. These papers had a constant structure. The problem was first stated, then the efforts of others to solve it were recalled, then the worker detailed his own experiments and observations, or some of them, described at greater length his final line of verification, and summarized his conclusions in a short paragraph. The scientific workers of antiquity proceeded on very different lines. They set down only their conclusions, but not their experiments. It was as though we had a collection of the last few lines of a series of scientific articles. The great defect of Greek

science was the omission to record the process, save again in mathematics. To the Greek it was the general principle which was important. The modern scientist knew that it was the conclusions which were the temporary and local accidents, and that it was the process which really mattered. In justifying his lectureship Dr. Singer said that the history of science had been neglected in this country. What there was of it, alike in science and in medicine, was too frequently allied with superficial biography, which seemed to take account of every department of a man's life except his mental processes. The breakdown of the educational system based on the old humanities made the history of science an almost necessary element in the curriculum. The history of science provided, along with other elements in the history of civilization, just that view of the mental history of the race which had been given by a study of the classics of Greece and Rome. We were well accustomed to recognize that the store of scientific knowledge was a general treasury from which all men drew, but it was not always remembered that the guardianship of that treasure had been in the hands of a very small company. The organic apparatus by which new knowledge had been created was the work of a mere handful in all countries and periods; and the contemplation of the conditions under which those men worked and lived must be of value, even in the practical and everyday sense, to those who would follow in their footsteps.

THE LEPROSY PROBLEM IN INDIA.

A CONFERENCE attended by forty-six missionary superintendents of Indian leper asylums (including six medical missionaries) and four medical Government delegates was held in Calcutta last February to consider the leprosy problem in India. The Conference, after sitting for four days, unanimously passed a series of resolutions; those dealing with medical matters were drafted by a committee of medical delegates. The resolutions affirmed that leprosy is slowly contagious, often by the discharge of the causative bacilli in the nasal discharges, even in early cases with no outwardly visible sores; that, although not directly hereditary, children are especially susceptible to infection from an early age; segregation, therefore, is the most effective measure for reducing the prevalence of leprosy. The committee unanimously endorsed the memorandum regarding the amendment of the Indian Lepers Act of 1898, which has been submitted by the Indian Auxiliary of the Mission to Lepers to the Government of India, and has been the basis of an amending Act recently introduced into the Imperial Legislative Council at Delhi. This will remove the absurdity of existing regulations which allow pauper lepers to be retained in leper asylums only so long as they have open sores; it will give further powers to control vagrant lepers and those engaged in certain trades, such as those connected with food supplies. After recommending facilities for training medical assistants in the diagnosis and treatment of leprosy, the Conference recommended that, in view of the fecundity of female lepers especially, the separation of the sexes is desirable as far as possible, and that any children born of leper parents should be separated from them at the earliest possible age; it recorded that a test by fourteen medical officers of leper asylums throughout India of Sir Leonard Rogers's treatment with sodium salts of unsaturated fatty acids had given most favourable results, 72 per cent. showing marked improvement in spite of the fact that most of the cases were advanced and the period of treatment had been comparatively short; further research into the treatment of leprosy was recommended, and arrangements for this have been made in Calcutta. The general resolutions recommended that pauper lepers ought first to be segregated in suitable settlements, as they are the greatest menace to public health; for owing to the numbers of lepers it does not appear to be practicable at present to segregate all those in India, although it has been accomplished with excellent results in the Philippines. The Conference was of the opinion that this measure would stamp out the disease in India if it were possible to apply it. A series of papers on the treatment of leprosy read at the Conference have been published in the April number of the *Indian Medical Gazette*, and include one by Sir Leonard Rogers, summarizing his results to date and reporting further progress with his researches. He now records ten cases in which the lesions have remained completely in abeyance for from one to two and a half years; but does not claim to cure the disease. Sodium morrhuate has proved to be as efficient and more easily used than sodium gynocardate, a point which is confirmed by the trials in the leper asylums. This led him to make similar preparations from other oils with still higher content of unsaturated fatty acids, and one of these, prepared from soya bean oil, has already given even better results than the former drugs; it has the great advantage of being almost painless when injected subcutaneously, and thus promises to prove a further important advance in the treatment of leprosy. The field is now opened up to further researches on this line. If those recommended by the Conference should indeed result in still more effective treatment which can be carried out in the proposed leper settlements, this should prove a powerful incentive to these dangerous patients to enter them voluntarily. In this way it may well prove an important factor in the future control, and eventual extermination, of this loathsome disease.

PREVENTION AND TREATMENT OF INSANITY.

THE first of the Maudsley lectures, founded by the bequest of the late Dr. Henry Maudsley, was delivered to the Medico-Psychological Association of Great Britain and Ireland by Sir James Crichton-Browne, at the house of the Royal Society of Medicine, on May 20th. The lecturer expressed the hope that the Maudsley lectures would prove a means of extending the usefulness of the Medico-Psychological Association, and of disseminating knowledge of its work. He dissented from the suggestions that had recently been made that asylum medical officers in England were deficient in knowledge of advances in psychiatry; these officers had in proportion to their numbers produced more than their fair quota of sound progressive scientific work; and in the diagnosis, treatment, and study of insanity this country had nothing to fear from comparison with others. Changes and reforms were necessary, but none recognized this more clearly than the asylum officer. The medical staff in some of the large asylums should be reinforced and more liberally remunerated. It was of the greatest importance that facilities should be provided for early treatment of mental disorder. In connexion with asylum treatment legal formalities, intended for the protection of the liberty of the subject, had led, if not to an increase of lunacy, to an accumulation of lunatics. The national shrinking from certification had in many cases converted what might have been a transitory illness into a permanent infirmity. It was to avoid such calamities and to facilitate early treatment that Maudsley had supplied the funds for the Denmark Hill hospital. Sir James Crichton-Browne went on to say that he looked forward to the establishment in large towns of similar hospitals and clinics, where early cases could receive treatment without incurring the odium of having been in an asylum. He anticipated also an extension and an improvement of the out-patient departments of public asylums; it was in these institutions that the chief bulk of the insane would always continue to be lodged and treated. He believed that during the war, when medical examination was essentially physical, many men of unsound mind had passed into the army; had their mental condition been examined as thoroughly as their physical state, a startling amount of mental unfitness in the adult male population would have been demonstrated. In consequence of the reawakening of public opinion to the importance

of national health, and the formation of the Ministry of Health, with a medical head, prompt steps would be taken for the better housing and feeding, and for the physical training of the people, for protection against over-fatigue, and for the restriction of the ravages of preventable disease, especially venereal disease. All these measures would be reflected in the course of time in the improvement of national mental vigour and a diminution in certain forms of mental disease. Improvement was also to be expected as a result of the new Education Act, but in order that education might be made fully effective in the prevention of insanity and its neurasthenic and hysterical harbingers, it was necessary that much study of the growing mind should be undertaken by psychological experts.

TREATMENT OF CEREBRO-SPINAL FEVER.

To the report by Surgeon-General R. S. F. Henderson, Director-General of Medical Services, New Zealand, on the health of the men in training camps during 1918, Captain J. W. Crawshaw contributes an account of an epidemic of cerebro-spinal fever at Featherston Camp. There were thirty-six cases among an establishment of 5,600, with eight deaths; a meningeal variety with early loss of consciousness, and a septicaemic variety were observed. In twenty-three cases the meningococcus was found on lumbar puncture; in five others the spinal fluid showed polymorphonuclear leucocytosis; thirteen out of twenty-four cases—an unusually high proportion—had the meningococcus in the blood. The low mortality of 22 per cent. is attributed to the vigorous use of antimeningitic serum given intrathecally, intravenously, or subcutaneously in average doses of about 50 c.cm., 150 c.cm., and 100 c.cm. respectively; repeated lumbar punctures were made in chronic cases, and if a serum rash had appeared a vaccine was used. Captain Crawshaw records a mild septicaemic case in which the meningococcus was found in the blood, although the cerebro-spinal fluid was clear and contained no organisms nor excess of leucocytes. Believing that the blood infection is primary and that of the meninges secondary, he advocates early intravenous (rather than intrathecal) injections of serum. The occurrence of cerebro-spinal fever was contemporaneous with a severe epidemic of influenza, which began in July and reached its maximum in November, producing altogether 8,528 cases. There were 287 deaths: of this number, 9 were directly due to cerebro-spinal meningitis. In the four camps there were 55 cases of cerebro-spinal fever, which in 31 cases followed directly on an influenzal attack. The clinical features of the influenza observed were very similar to those of the British and American epidemics. The influenza bacillus or a streptococcus was usually found; there was a certain amount of evidence of a partial immunity during the first few weeks after an attack. The systematic use of inhaling chambers, in which a vapour containing a 1 per cent. solution of zinc sulphate was breathed quietly for three minutes (preferably twice a day), was found to diminish the incidence of nasopharyngeal catarrh, measles, and diphtheria; though it did not altogether prevent influenzal attacks, it was thought to lessen the severity of the illness in those who were attacked. Inhalation chambers were installed on troopships, and a lessened incidence of severe infection followed.

THE dinner in celebration of the services of the Royal Army Medical Corps, and the eminent civilians attached to it, during the recent war, will take place at the Connaught Rooms on Tuesday, June 8th. Lieut.-General Sir Alfred Keogh, G.C.B., G.C.V.O., will be the chief guest, and among those who have accepted invitations to be present, as commanders of armies, are Field-Marshal Viscount French, Field-Marshal Earl Haig, Generals Lord Horne, Lord Rawlinson, Sir Ian Hamilton, and Sir Archibald Murray. The Right Hon. Winston Churchill, Secretary of State for War, and other members of the Army Council will be present. Some forty hosts will preside at the different tables; the committee being Lord Derby, Lord Midleton, Lord Edmund Talbot, General Seely, the Right Hon. H. J. Tennant, and Colonel Sir Edward Ward, to whom all communications should be addressed at 10, Grosvenor Street, W.1.

THE first examinations for the newly established diplomas in psychological medicine and ophthalmic medicine and surgery of the Royal Colleges of Physicians and Surgeons will commence on June 28th and July 26th respectively. Full information can be obtained from the Secretary, Examination Hall, 8, Queen Square, Bloomsbury.

Medical Notes in Parliament.

The Parliamentary Session.

THE Whitsun recess gives little opportunity of taking stock of the parliamentary session, but nevertheless marks an important stage. It is intended as the briefest of breaks, and after the House of Commons reassembles on Tuesday, June 1st, great matters will within a very short time have to be settled. Dr. Addison has succeeded in passing the National Health Insurance Amending Bill, and Sir Robert Horne has had similar success with the second Profiteering Bill. Mr. Chamberlain, too, whatever the view taken of his enthusiasm for a levy on capital, has strengthened his reputation for courage in pressing a necessarily unpopular budget through Parliament. Mr. Bonar Law, it may be added, maintains to the full his hold upon the rank and file of Government supporters.

The main interest at the moment is in finance and houses, and indirectly in the question whether there will be an autumn session, because on the latter point will depend the decision what measures are to be advanced through all stages this year. There is a feeling in the House—not confined to one side—that the unsettled condition of affairs abroad, and spasmodic labour troubles at home, make a long recess of four or five months undesirable; and it is held by those who argue thus that the power to summon Parliament quickly would hardly meet an emergency situation, as it is a dangerous weapon to employ, being liable to accentuate trouble, whereas a Parliament sitting or about to sit might be of some use.

What, however, will probably determine the issue is whether the Cabinet decides to adopt the war wealth levy scheme, which Sir William Pearce's committee has found to be "practicable," while carefully refraining from offering any recommendation concerning it. Bankers and other financiers, not necessarily hostile to a levy on war wealth, condemn such a proposal as dangerous to credit being put forward after the money has been so widely applied to business (when it has not been dissipated), and they also urge that hardship would be caused by the inevitably arbitrary boundaries, and the inability to distinguish thrift from war wealth despite qualifications. Against these considerations is Mr. Chamberlain's eager desire to cut down the war debt by a big sum. If he should carry the Cabinet with him in favour of the scheme, then a highly controversial bill will occupy much time, and, by delaying other matters, involve an autumn session.

In that event it is possible that the promised Health Services Bill may be presented and possibly passed into law this year. Weighted as he is with so many other responsibilities, Dr. Addison could not be expected to produce this in time for it to be dealt with in a session ending in this summer, if, indeed, it can be done at all this year. As for the Licensing Bill, which was mentioned in the King's Speech, the belief is that in any case only a short renewing measure can be contemplated this year; and it is doubtful whether the bills dealing with labour questions can be taken, as they mean the completion of a variety of negotiations. As things stand, the last stage of the Budget has still to be passed. The Rents Restrictions Bill was only introduced last week; the Bill to amend State arrangements for agricultural production as regards guaranteed prices and wages is also at first reading. The Milk Bill, the Census Bill, the Bill for Training and Assistance of the Blind, and a host of small measures have yet to be discussed all through in both Houses. Then, too, the additional grant, which is contemplated to assist the building schemes, will bring that very serious problem

of housing accommodation before Parliament again in its varied aspects. Altogether the business before the House of Commons is very considerable, and there are always contingencies that may bring fresh calls upon time. The hardest worked department of all is the Ministry of Health, and it certainly should have every sympathy and encouragement in its energetic efforts to make good in a few years for the many years of slow going by the Local Government Board of the past, when public support was not behind the vital interests of preventive and protective services.

Financial Difficulties of London Hospitals.—Sir C. Kinloch Cooke asked the Minister of Health, on May 19th, to make a definite announcement regarding the steps he was taking to meet the difficulty that had arisen in connexion with the finance of London hospitals; whether he was aware that some hospitals were even now unable to meet their current liabilities, and that unless relief by grant in aid was immediate they would have no alternative but to curtail their beneficent work, and possibly close down altogether. Dr. Addison said that he was in consultation with the various authorities concerned, but was not yet in a position to make any definite statement. He was well aware that the matter was pressing, and hoped that it would not be long before he could make a statement.

Blind Persons Bill.—The Blind Persons Bill, introduced by the Minister of Health in response to an undertaking given in the discussion of the bill proposed by Mr. Ben Tillett, was read a second time on May 14th. The aim, Dr. Addison said, was not only to deal with blind persons, but to prevent the occurrence of blindness. As a result of the work of the Advisory Committee on the Blind, the Ministry had a complete survey of the existing methods of dealing with blind people, and Mr. Barnes had consented to preside over a special inquiry to advise on the steps which should be taken to improve preventive services. The two main provisions of the Government bill are, first, that county councils or county borough councils shall have power to provide for the training of the blind; and, secondly, that the conditions relating to old age pensions shall become applicable to blind persons at the age of 50.

Indian Services.—In reply to a question by Mr. Lunn, on May 19th, the Under Secretary of State for India gave the following particulars of the approximate cost per annum of the increases of pay sanctioned in the Indian services indicated:

	£
Indian Civil Service	360,000
Indian Police Service	130,000
Indian Educational Service	100,000
British officers of Indian army and of British troops in India	1,700,000
Indian Medical Service	250,000

He did not propose to publish his correspondence with the Government of India, which was very voluminous. The usual course was for the Government of India to announce decisions by resolutions promulgated in India, and this was the most convenient procedure.

Opium and Morphine.—Mr. Montagu has stated that the acreage under opium cultivation in India in the year 1916–17 was 204,186 as compared with 144,561 in the year 1913–14. The quantity exported to the United Kingdom on Government account in 1918–19 was 2,400 chests, of the value of Rs. 20.11.230. There was no export to the United Kingdom on private account, and comparative figures for pre-war years are not available. Sir Robert Horne has given particulars of the export of morphine from the United Kingdom during 1919. The total quantity of morphine and morphine salts manufactured in the United Kingdom and exported was: To British possessions 20,237 oz., of the value of £21,913; to foreign countries 303,733 oz., of the value of £314,948. These figures do not include exports through the post.

Vaccinal Condition of Small-pox Carriers.—Mr. R. Young, on May 18th, asked for particulars of the vaccinal condition of various small-pox carriers in England and Wales in the year 1919, given on pages 87–90 and pages 126–129 of the Medical Supplement of the 48th annual report of the Local Government Board. Dr. Addison replied that the soldiers at Pontefract, Bury St. Edmunds and Chorley Wood had been vaccinated in infancy; the soldier at Lincoln had been vaccinated in infancy and apparently revaccinated while in the army, but the latter operation was not successful. The vaccinal condition of the soldier at Croydon was not known; there was no evidence to show that he suffered from small-pox. The person who introduced small-pox into Wisbech had been vaccinated in infancy, as had also the first known case at Southend (that of a child). A relative of the soldier at Bishops Stortford was unvaccinated, the other had been vaccinated in infancy. The three cases removed from the ss. *Porto* were aged respectively 36, 5½, and 4½ years; the first mentioned had been vaccinated in infancy, the last two were unvaccinated. The reason that this information was not given in the sections of the report to which Mr. Young referred was that they were not specially concerned with the vaccinal conditions of the patients. Particulars of the vaccinal condition of the cases of small-pox occurring in the country during the year 1918 were given on page 179 in Appendix C of the Report, and similar particulars appeared in the Medical Supplement of the Annual Report of the Local Government Board for several years past. Dr. Addison stated, in reply to a recent question, that the year in which the highest percentage of children was vaccinated in England and Wales was 1881; the year of the lowest percentage was 1917; the number of deaths in England and Wales from small-pox amongst children under 10 years of age in 1881 was 1,078; there were none in 1917.

Venereal Disease in the British Army.—In reply to a question by Captain Elliot as to the case rate of venereal disease amongst the British army in the United Kingdom, France and Flanders, and Germany (occupied country) in the years 1918, 1919, and the first quarter of 1920, the Secretary of State for War said: The approximate ratios per 1,000 of admission for venereal disease are as follows:

	Ratio per 1,000 per annum, 1918.	Ratio per 1,000 per annum, 1919.	Ratio per 1,000 First Quarter 1920.
United Kingdom	43	59	14.8
France	32	67	40.5
Army of Rhine	—	46	42.3

The ratios for 1919 and 1920 are to a large extent fallacious owing to rapid demobilization. As I stated in my answer on May 11th, there has been a rise in the incidence of venereal disease amongst the troops in France and Germany, but I am glad to say that the latest information shows some improvement.

Importation of Condensed Milk.—Sir Robert Horne stated, on May 19th, that during the first four months of 1920 this country received 344,024 cwt. of sweetened whole milk, and 114,696 cwt. of separated or skimmed, and 125,034 cwt. of unsweetened milk. The United States contributed 245,959 cwt. of sweetened whole milk, 5,074 cwt. of separated or skimmed, and 123,347 cwt. of unsweetened milk. It was impossible to say what proportion of imports was of the standard composition defined by the Government chemist in his annual report, as only a limited number of consignments were sampled. The number examined in Government laboratories from January 1st to March 31st was 34. Of these, 4 were samples of unsweetened milk and they showed a range of concentration of from 2.35 to 2.42. Of 30 samples of sweetened milk 19 had a concentration less than 2.5 (range 2.06 to 2.49), and 11 had a concentration of 2.5 and over (range 2.50 to 2.90). The definition of the Government chemist was milk reduced to two and a half to three times its original bulk by the evaporation of water.

Central Research Institute, Hampstead.—Colonel Burn, on May 20th, said that complaints had been made by residents about the howling of a dog kept at the Mount Vernon Hospital, Frognal, Hampstead, and asked whether a licence for vivisection was held by anyone in the hospital. The Home Secretary said that no complaints on the subject had been made to him, and he was unable on inquiry to find any confirmation of the complaint. The place was not now a hospital, but the Central Research Institute of the Medical Research Council was registered under Acts 39 and 40 Victoria, chap. 77, and several persons held licences available there. It was under regular inspection and supervision by His Majesty's inspectors under the Act, and he had every reason to believe that the regulations as to the treatment of animals under experiments were strictly carried out. He saw no ground for any further inquiry.

Typhus in Poland and Russia.—In reply to Mr. Lawson, on May 17th, Mr. Harmsworth, Under Secretary, Foreign Office, said that at the meeting, on March 13th, of the Third Session of the Council of the League of Nations it was decided, on the motion of the British member, to instruct the International Health Conference to consider what measures should be taken to prevent the spread of typhus in Poland and the neighbouring countries. The situation in Poland was certainly serious, but it could not be said that the country was ravaged. The recent military advance of the Poles did not modify the proposal before the League of Nations. On the contrary, the medical authorities interested held that to the extent that the advance secured better conditions of Government in the Ukraine it would increase the opportunities of controlling the epidemic. Lord Robert Cecil inquired whether there were as many as 250,000 cases of typhus in Poland, and whether this was five times greater than existed at this time last year. Mr. Harmsworth replied that he had not the exact figures on record.

Answers in Brief.

In reply to a question, on May 18th, as to the action to be taken on the report of the Medical Consultative Council, Dr. Addison said that no pledge could be given as to the date on which the Health Services Bill would be introduced.

A discharged soldier in an institution for nerve strain does not draw a pension, but receives allowances, generally at the rate of 21s. a week, with additions for rank and dependants. The Ministry of Pensions defrays the charges of the institution. Pensions may be reduced by one-half or less if the treatment certified to be necessary in the man's own interest is refused. Every such case is considered on its individual merits.

England and Wales.

HEALTH SERVICES AND HOSPITALS IN LONDON.

IT was reported to the London County Council on May 18th that the Minister of Health received a deputation from the Council on April 23rd to discuss the recent resolutions of the Council on the health services of London (BRITISH MEDICAL JOURNAL, December 27th, 1919, p. 861). Dr. Addison told the deputation that in any scheme which was proposed the question of London must be specially dealt with. In regard to many health services he said that it was essential that there should be an authority competent to deal with them over a considerable area, and the more highly specialized they became the wider generally must be the range of authority. When the draft stage was reached, he would consult freely with the Council. It was inconceivable that any system of health authority could be set up which did not include the hospital system. In any case 50 per cent. of the beds in the country generally—he did not know how it was in the London area—were in the Poor Law infirmaries, so that it seemed to him that it would not be possible to split up hospital supervision. Speaking in general terms, he thought that the main principles governing the Council's recommendations were unassailable.

BIRTHS AND DEATHS IN THE FIRST QUARTER, 1920.

The Registrar-General's last quarterly return, dated April 30th, shows that the deaths registered in England and Wales during the first quarter of 1920 numbered 137,637. Influenza was stated to be either a primary or a contributory cause of death in 4,037, or 2.9 per cent. of the total deaths in the quarter. Thirteen deaths from smallpox were registered. The total number of deaths was 22,877 more than in the preceding quarter, but 54,285 fewer than in the first quarter of 1919. Infant mortality, measured by the proportion of deaths under 1 year of age to registered deaths, was 88 per 1,000, being 32 per 1,000 below the average in the ten preceding first quarters, and the lowest recorded rate for any first quarter. During the same period 271,082 births were registered in England and Wales, being 47,513 more than in the first quarter of 1919; it was the highest number recorded in any quarter since the establishment of civil registration, and corresponded to an annual rate of 29 per 1,000 of total population. The natural increase of population in England and Wales by excess of births over deaths was 133,445, against 14,810 and 24,303 in the first quarters of 1917 and 1918, and a natural decrease of 47,002 in the first quarter of 1919. This statement excludes, however, all deaths among the armed forces, except those registered in this country.

PRESENTATION TO MR. F. C. LARKIN OF LIVERPOOL.

Mr. F. C. Larkin, F.R.C.S., of Liverpool, has just retired from the post of honorary surgeon to the Liverpool Stanley Hospital, where he has worked for nearly thirty years. He has also recently retired from the secretaryship of the Lancashire and Cheshire Branch of the British Medical Association and from the chairmanship of the Organization Committee of the Central Council of the Association. Though not personally engaged in panel practice, he has acted as chairman of the Liverpool Local Medical and Panel Committees from their formation. A committee has been formed, with Sir James Barr as chairman, from the members of the Liverpool Division and the Liverpool Panel Committee, and from St. Helens and Burnley, to arrange that Mr. Larkin shall receive some recognition of his work. An appeal which has been issued states that, while heartily engaged in his professional work, Mr. Larkin has devoted much time and energy to the important though often thankless task of organizing his medical brethren in their own defence, and whatever measure of success has attended the movement for the betterment of the medical profession in recent years must be largely attributed to the pioneer work of Mr. Larkin and those who acted with him in London and the provinces. Subscriptions, not to exceed one guinea each, should be forwarded to the honorary treasurer and secretary, Mr. F. Strong Heaney, secretary of the Lancashire and Cheshire Branch of the British Medical Association, at 36, Rodney Street, Liverpool.

PAYMENT OF VISITING STAFFS OF VOLUNTARY HOSPITALS.

A conference of representatives of the honorary visiting staffs of some of the larger voluntary hospitals of the Midlands was held at the Leicester Royal Infirmary on May 18th. The hospitals represented included those of Birmingham, Burton, Coventry, Derby, Leicester, Loughborough, Manchester, Northampton, Nottingham, Salford, Sheffield, Stoke-on-Trent, West Bromwich, and Wolverhampton. Thirty-six representatives were present. The chair was taken by Sir Richard Luce of Derby. The questions brought up for discussion were:

1. The desirability of payment for the visiting staff for work done at their hospital on behalf of the Ministry of Pensions, the Ministry of Health, or the local medical health authorities, and, if so, at what rates.
2. Whether the time has come to ask for payment for the visiting staff for all work done by them at the hospitals, and, if so, whether this should take the form of an honorarium, a salary, or a percentage of the expenses of the hospital. If not, what alteration in the existing management or financial arrangements of the hospitals would create the need for such a request.

After full discussion the following resolutions were passed:

1. That payment for the visiting staffs is desirable for work done at their hospitals on behalf of the Ministry of Pensions, the Ministry of Health, or for the local medical health authorities.
2. That the time has not come for visiting staffs to ask for payment for all work done by them at the hospitals. But that the need for such a request would arise if the State or local authorities should assume control over the hospitals or if the income of the hospitals ceased to be derived from voluntary contributions.

The question of methods and rates of pay was referred to a committee for detailed consideration and report. No definite organization was formed for future meetings, but the chairman and secretary to the meeting were instructed to reassemble the Conference at their discretion.

CENTRAL MIDWIVES BOARD.

A penal session of the Central Midwives Board for England and Wales was held on May 20th, with Sir Francis Champneys in the chair. Two women were removed from the roll; decision was postponed in one case for report; and two midwives were cautioned. One application for restoration to the roll was granted. At the ordinary monthly meeting, held on the same day, Dr. Fairbairn raised the question of reconsidering the conditions on which approval of midwives as teachers is granted, and also the question of arranging for courses of training for midwives seeking approval as teachers. It was decided to ask the Approval Subcommittee to consider and report on a scheme for the further instruction of teachers, and that Dr. Griffith be added to the committee for this purpose. In reply to a letter signed by all the examiners at the Birmingham centre, it was resolved to increase the number of examiners at that centre from six to eight, and to inform these examiners that if they will forward to the Board a request from the examiners at all the examination centres that the fees be increased, with reasons therefor, the Board will favourably consider such request.

Scotland.

GENERAL NURSING COUNCIL FOR SCOTLAND.

THE first meeting of the General Nursing Council for Scotland was held on May 10th at the office of the Scottish Board of Health, Edinburgh. The meeting was opened by Sir Leslie Mackenzie, of the Board of Health. Captain C. B. Balfour, of Newton Don, and Miss Norah Milne, B.Sc., were appointed chairman and vice-chairman of the Council respectively. Mr. C. L. Farmer, of the Scottish Board of Health, was appointed interim secretary.

TREATMENT OF VENEREAL DISEASES.

The Scottish Board of Health states that it has under consideration the question of extending the application of the Venereal Diseases Schemes inaugurated or to be inaugurated in Scotland in pursuance of the Public Health (Venereal Diseases) Regulations (Scotland), 1916, to cases of syphilis other than those to which the operation of the

schemes is at present restricted. In the light of the experience which has already been gained, the Board has been advised of the difficulty in distinguishing between communicable and non-communicable phases of the disease. It has accordingly decided that differentiation between communicable and non-communicable cases should no longer be attempted, and that all cases requiring anti-syphilitic treatment should be regarded as being properly included within the scope of the schemes for the control of venereal diseases, with the exception of those of general paralysis of the insane, the majority of which are removed to asylums.

Correspondence.

THE GENERAL PRACTITIONER AND THE HEALTH SERVICES.

SIR,—Dr. Brackenbury's paper, which appeared in the SUPPLEMENT of May 15th, should be carefully studied by every general practitioner. The position might be summed up as follows:

The health of the community depends chiefly on three main factors: (1) A good mother, (2) a good general practitioner, (3) a good scavenger.

Now that the mother has a vote she must insist that the general practitioner is made easily accessible to her, that her daughters are no longer spoilt by the so-called educational authorities, and that the scavenger does his cleaning thoroughly and minds his own business.

The general practitioner must now wake up and make sure that all the other factors in the so-called health services, which are only really valuable in proportion to the assistance they give him—and through him to the mother—are kept in their proper place and are not allowed to push him aside or to become his masters.—I am, etc.,

WILLIAM PATERSON, M.B., Ch.B.Edin.,
Honorary Secretary, Willesden Division.

Harlesden, N.W., May 22nd.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

SIR,—Dr. Thomas Beattie's description of the common signs and symptoms of early phthisis (January 24th, 1920) is so far from that I have encountered in this country that it may interest your readers to know the differences.

Haemoptysis without apparent cause or prior symptoms is, unless due to hydatid cyst, always tuberculous in origin here. Pleurisy without effusion is rare unless there is some accompanying disease, but pleurisy with effusion of the so-called idiopathic type without any apparent cause is equally always tuberculous. Not every case subsequently develops phthisis, but it is a perfectly safe thing to treat all such cases as being of tuberculous origin. I make a rule of having the cytology of all puncture fluids reported on and, in addition, all pleural fluids injected into a guinea-pig, in order to leave no doubt as to the origin of the effusion.

The general ill health and toxic symptoms—dyspepsia, wasting, etc.—are the same, but recur from time to time, and in the absence of any obvious cause, such as poor teeth or bad habits in eating or drinking, should lead to a regular investigation of the temperature. The charts of early phthisis we get here are quite distinctive—97° in morning and 99.4° or so in the afternoon—and, other causes being excluded, are as positive an indication of phthisis as can be had even without physical signs.

I am surprised to see no mention made of cough as an invariable accompaniment of active tuberculosis. I have never yet encountered a case in which this was absent. I should not call a case with the physical signs he describes an early case; I should regard it as long past the early stage. Personally I always try to make a diagnosis irrespective of physical signs; in this country it is quite simple. Loss of weight and appetite *plus* cough and a characteristic temperature chart, other sources of such trouble being excluded, are reliable indications.

Dr. Beattie's statement as to the occurrence of tubercle "at any site in the lungs," where it may cause physical signs, is not in accordance with my experience. The contiguous borders of the upper and lower lobes, close to the edges, and more frequently on the right side, is where I have learned to look. I have never encountered early phthisis anywhere else.

I doubt if there is such a primary disease as bronchitis, except from the direct irritation of dust and such like causes. The bronchitis of the textbooks is a disease I have been on the look-out for for the last thirty years without yet encountering a case which was not either tuberculous in origin or accompanied by some evidence of parenchymatous disease of the lung. I heartily endorse Dr. Beattie's remarks on the value of sputum examination.

X-ray examination is my routine in all cases, as cysts in the lung are not uncommon and will exactly simulate phthisis. A clear conception of the deficient expansion of an apex is most easily obtained by this means.

As to the use of tuberculin, I have given it up as being far too dangerous, and I should feel exceedingly sorry to find I had stirred up enough focal reaction to increase the physical signs.—I am, etc.,

ALFRED FOSTER,
Hon. Physician, Christchurch General Hospital.

Christchurch, New Zealand, March 22nd.

TREATMENT OF ANTE-PARTUM HAEMORRHAGE.

SIR,—In the discussion on the treatment of ante-partum haemorrhage, as reported on page 672 of your issue of May 15th, mention is not made of the patient with severe external accidental haemorrhage who is still not in labour twenty-four hours after plugging cervix and vagina.

In a recent case of this nature I left a black catheter in the uterus before replugging the vagina. Labour terminated satisfactorily for the mother ten hours later. If I again meet with a case of severe external accidental haemorrhage in which the patient is not in labour it is my intention at the outset to pass several gum-elastic bougies into the uterus and plug the vagina without removing the bougies.—I am, etc.,

H. S. HOLLIS, M.B.Lond.

Hove, May 18th.

THE EARLY DIAGNOSIS OF SYPHILIS.

SIR,—In regard to the two letters under this title that appeared in your issues of May 1st and 15th, may I be permitted, as one of the earliest writers in this country on the laboratory diagnosis of early syphilis, to record my opinion on this important subject?

During the period 1903-1913 my interest was largely confined to the study of the clinical pathology of syphilis especially in regard to the early diagnosis; whilst since that date I have had more opportunity of studying syphilis from the clinical side.

I am in cordial agreement with the writers of the letter in your issue of May 15th as to the importance of clinical observations, and I think it is a matter beyond doubt that a large number of cases of syphilis in the early primary stage can be diagnosed with absolute certainty by clinical observation alone, and that valuable time may be lost while waiting for confirmation by laboratory methods. If the history of the incubation period, the appearance and induration of the sore, and the associated inguinal adenitis, all conform to a diagnosis of syphilis, I am of the opinion that it is best to accept this evidence as conclusive, and to immediately adopt anti-syphilitic treatment. I have on more than one occasion in the past delayed treatment until I have been able to obtain corroborative pathological evidence, and have only been able to obtain this evidence concurrently with the onset of secondary symptoms, and thus much valuable time—indeed, time of almost vital importance—has been lost. On the other hand, there are very many sores which I have not been able to diagnose as syphilitic by their clinical appearance or history, but in which I have been able to find typical *Sp. pallida*. It must be the experience of nearly every one with an extensive experience of examination by dark-ground illumination how frequently *Sp. pallida* are found in sores that are quite atypical in appearance. It appears to me, therefore, to be a matter of very grave importance that all sores atypical of syphilis should be subjected to a searching examination for *Sp. pallida*.

I have no great faith in the Wassermann reaction as a means for the *early* diagnosis of syphilis, and I do not

quite understand the rationale of Dr. Johnson's procedure. If he does not find the *Sp. pallida* he gives two injections of 0.45 gram of novarsenobenzol at a month's interval, the first followed by two blood tests a week and fortnight after injection, and the second by a blood test a week after the injection. If all these blood tests are negative I gather that he concludes the patient is not suffering from syphilis. Such evidence cannot be accepted as conclusive. If the clinical appearance and history are atypical and the dark-ground illumination and Wassermann reaction both negative, I should prefer to omit all but local treatment until the occurrence of definite clinical or pathological evidence of syphilitic infection.

It is very rare to fail to find *Sp. pallida* in a recent sore (even if local antiseptics have been applied by the patient before consultation) if the sore is treated with hypertonic saline solution for a couple of days.

A negative Wassermann reaction is also extremely common, even with well-marked and typical sores in which large numbers of *Sp. pallida* are present; indeed, I place no diagnostic value whatever on a negative Wassermann with a sore which has not been present for over a month. I conclude, therefore, that clinical observation and pathological examinations are of equal importance under different circumstances.—I am, etc.,

London, W., May 18th, H. WANSEY BAYLY.

AORTITIS AND AORTIC REGURGITATION.

SIR,—Dr. Theodore Fisher's letter in the JOURNAL of May 15th, p. 688, calls for a reply, if only to thank him for the courteous manner in which he has written. I think I may also say that his two letters show that we are in complete agreement on the main issue—namely, the extreme importance of the cardio-vascular lesions of syphilis.

I should, perhaps, in my letter in the JOURNAL of May 8th, have given definite reference to recent American writings upon the question under discussion. Warthin (*American Journal of the Medical Sciences*, 1916, vol. clii) describes the presence of spirochaetes in the aortic tissues and in the myocardium. His work has been quoted by several writers in the *Medical Clinics of North America* (Dr. Thomas McCrae, vol. i, No. 2, and Dr. Charles Louis Mix, vol. i, No. 5).

In the last five cases of cardio-vascular syphilis on which we obtained a *post-mortem* examination a myocarditis was in three instances considered to be present on naked-eye appearance. We have not as yet undertaken the demonstration of the presence of spirochaetes in these cases.—I am, etc.,

Belfast, May 17th. JOHN E. MACILWAINE.

Obituary.

WE regret to record the death of Dr. WILSON EAGER, which took place at his residence in Woodbridge, Suffolk, on May 11th, 1920. He was born on May 10th, 1845, and was the son of Dr. Richard Eager, a surgeon in Guildford, Surrey. Like his elder brother, Dr. Reginald Eager, he was educated at Guy's Hospital, and eventually made his life-work the study of mental disease and the cure of the insane. Dr. Wilson Eager, having taken the M.R.C.S., L.R.C.P., and L.S.A. diplomas in 1871, became clinical assistant at Bethlem Hospital; thence he went as assistant medical officer to the Prestwich Asylum. In 1876 he was appointed resident physician and superintendent of the Suffolk County Asylum, Melton (now St. Audry's Hospital), a position from which he retired in 1897 after twenty-one years' successful service. Dr. Eager was responsible for greatly improving the lighting, heating, and structural arrangements of this institution, which during the latter part of the eighteenth century had been the Woodbridge workhouse. Besides being an able administrator Dr. Eager was of an inventive frame of mind; he introduced into the institution many ingenious appliances for institutional nursing and equipment. Dr. Eager took a warm interest in the social life of the institution; he was fond of music, and by his own personal efforts secured the provision of an excellent organ for the chapel. On leaving the County Asylum Dr. Eager joined his brother in partnership at a private asylum near Bristol, but after ten years he decided to retire, and went to live in Woodbridge, where he had many friends. He leaves a son, Dr. Richard Eager, O.B.E., who is deputy medical superintendent of the Devon Mental Hospital, and a married daughter, who lived with him for many years. His wife predeceased him by twelve years.

Medico-Legal.

AN ABORTIONIST'S SENTENCE.

IN the JOURNAL of April 24th, p. 589, a short account was given of the trial at the Central Criminal Court before Mr. Justice Shearman, of Devi Dayal Sasun, L.R.C.P. and S.Edin., L.R.F.P.S.Glasg., of Brady Street, Bethnal Green, for the murder of a young single woman. The prosecution alleged that the woman died as the result of an illegal operation performed by the prisoner. The jury acquitted Sasun of the charge of murder but found him guilty of manslaughter, and he was sentenced to ten years' penal servitude. In the Court of Criminal Appeal on May 17th, before the Lord Chief Justice, Mr. Justice Avory, and Mr. Justice Roche, Sasun applied for leave to appeal against his conviction and sentence, and also for leave to call further evidence. The Lord Chief Justice in giving judgement, as reported in *The Times*, said that the court was seised of the case, and neither the comments nor the additional evidence of a doctor could assist it. The case against the appellant was that he had performed an operation with intent to procure abortion, and that the woman died of shock from the operation. Regarding the contention that the operation was not proved to be the cause of death, his lordship observed that the woman undoubtedly visited Sasun on the day before she was found dead. There was considerable mystery about what happened in the surgery and after she had left it, but there was evidence that the woman had died in the surgery, and that she had been carried by the appellant to an archway and left there. The main case for the appellant was that he had not done an operation on the woman. Dr. Spilsbury's evidence for the prosecution established that the woman's death was due to the insertion of an instrument used upon her, and that she had died within two or three minutes from shock following the operation. Death very rarely ensued in that way, but Dr. Spilsbury said he had known other cases. Apart from such cause there was no indication of a cause of death. In a bag found on the body of the woman there was a bottle of chloral, and in her stomach 7½ grains of chloral were found; but it was clear from the medical evidence that chloral was not the cause of death. Three obstetric physicians had been called for the defence, but all that they could say was that in the course of their normal and legitimate experience in cases in which all care had been taken they had not had a similar case. In dismissing the application his Lordship said that all the facts had been fully presented to the jury, who on a proper direction by the judge found that Sasun had committed manslaughter, and had killed the woman by performing an illegal operation upon her. The jury might well have found a verdict of murder, but had taken a more merciful course. Having regard to the fact that the appellant was found to be a professional abortionist, the sentence was not too severe.

Universities and Colleges.

UNIVERSITY OF LONDON.

OFFER OF A SITE.

PRESENTATION DAY at the University of London this year was made memorable by the simultaneous publication of an offer by the Government of a large site in Bloomsbury made through the Chancellor, Lord Rosebery. The site comprises 11½ acres, and lies immediately to the north-west of the British Museum; it extends from the west side of Russell Square to the back of Gower Street, and from the British Museum to the south side of Gordon Square. The site is at present covered by houses, but the leases of many of them expire before 1924, of others in 1928, and of most of the remainder in 1939. The ground is offered as a site for the head quarters of the University, and for colleges and institutions connected with it, including King's College, whose premises in the Strand are now inadequate for its needs. The Government has reluctantly decided that while it is prepared to make such provision as will secure the University from loss in respect of maintenance charges on the new University head quarters, the state of the national finances does not justify it in providing the cost of the buildings themselves from public funds. It believes that the University may look with confidence to the generosity and public spirit which has always marked the citizens of London.

The presentation ceremony took place in the Albert Hall on May 19th. The Principal Officer, Sir Cooper Perry, said that the resources of the University were strained to the utmost. The admissions amounted to 6,295 as compared with 3,852 in 1913–14, and the total number of candidates for all examinations to 18,352 as against 11,920 in 1913–14.

In the evening a graduation dinner took place in the Guildhall, when the Vice-Chancellor of the University, Dr. S. Russell Wells, presided. After dinner the Lord Chancellor said he rejoiced to be able to pay a tribute in his presence to Lord Haldane for the part he had taken in building up the army which won the war. The Minister of Education (Mr. Fisher) claimed that the present Government had shown no lack of interest in educational improvements. The war had made the country alive to the value of education, and the universities of

the country were fuller than ever before. To the University of London the war had given a great opportunity, for the German universities were under a cloud, the Dominions were anxious to take advantage of the seats of learning in this country, America was ready to send thousands of students, and the allied countries were more alive than ever before to the resources of English learning and the elasticity of English genius. The Government, he said, had no desire to force on the Senate the gift of the site, but hoped that the citizens of London would realize that the opportunity thus offered to them would make the University of London the central seat of the higher learning and research of the whole empire. The site was part of a larger area which might by degrees be acquired as university needs developed.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on May 13th.

Issue of Diplomas.—Diplomas of membership were granted to seventy candidates found qualified at the recent examinations. Diplomas in Public Health were granted jointly with the Royal College of Physicians to nine candidates. Diplomas in Tropical Medicine and Hygiene were granted to thirteen candidates.

Anatomical Nomenclature.—A report from the Court of Examiners expressing agreement with the Anatomical Society of Great Britain and Ireland in recommending that the old nomenclature should not be departed from in anatomical text-books or by medical men in general, was adopted by the Council.

Diplomas in Psychological Medicine and in Ophthalmic Medicine and Surgery.—The Council agreed to the regulations for diplomas in Psychological Medicine (D.P.M., R.C.P. and S.Eng.), and in ophthalmic medicine and surgery (D.O.M.S., R.C.P. and S.Eng.), details of which were given in the report of the meeting of the Royal College of Physicians on April 29th (BRITISH MEDICAL JOURNAL, May 8th, p. 658).

Examinations for these diplomas will commence on June 28th and July 26th respectively. Full particulars can be obtained from the secretary, Examination Hall, 8, Queen Square, Bloomsbury, W.C.1.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following, after examination, have been admitted Fellows:

J. S. Arkle, C. V. Baigent, H. Banks, M. R. Boe, A. L. Buchanan, C. H. Corbett, P. C. Datta, J. N. F. Ferguson, F. C. Greig, E. W. Hall, A. D. Haydon, A. E. Herman, W. H. Johnston, G. J. Joubert, C. N. Laver, A. P. Lawrence, C. R. Merrillees, R. K. Merson, R. P. Nash, J. M. Pringle, F. H. Robbins, H. F. Seymour, F. M. Spencer, R. Stevenson, C. B. Tudehope, C. A. Verge, R. G. Walker, A. Walbrugh, N. J. Watt, H. Williamson, G. S. Woodman.

The Bathgate Memorial Prize, consisting of bronze medal and set of books, has, after a competitive examination in materia medica, been awarded to John Herbert Appleyard.

The Ivison Macadam Memorial Prize in chemistry, consisting of bronze medal and set of books, has, after competitive examination, been awarded to Leonard Alexander Watson.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.

THE following have been admitted Fellows: James Devon, Alexander Morton, Edward J. Primrose.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been admitted diplomates in Public Health:

M. E. Willcock, S. Honeyman, G. King, I. C. Mackay, R. J. Tait, Margaret A. Alexander, T. M. Anderson, P. C. Livingston, J. W. K. Bruce, H. F. W. Adams, E. F. Fisher, Jessie A. MacLaren, T. P. Herriot, A. Bremner, A. G. Carment.

The Services.

HONOURS.

MENTIONED IN DISPATCHES.

A SPECIAL Supplement to the *London Gazette*, dated May 18th, includes the following in a list of names brought to the notice of the Secretary of State for War for valuable services rendered in connexion with the military operations in the area indicated during the period April 1st, 1917, to May 31st, 1918.

North-West Frontier of India: Colonels W. E. Hardy, I.M.S., and A. E. Tate, A.M.S. (R.P.); Major W. T. McCowen, I.M.S., and Muhammad Raza Khan, 1st Class Sub-Assistant Surgeon, I.M.D.

East Persia: Assistant Surgeon W. J. Marshall and Sub-Assistant Surgeon Lambodar Misra, I.M.D.

South Persia: Lieut.-Colonel (temporary Colonel) H. Burden, C.I.E., I.M.S.; Captain (temporary Lieut.-Colonel) H. R. B. Gibson, I.M.S., and Jemadar Mumtaz Ali, I.M.D.

The following are included in a list of officers and others mentioned by General Sir G. F. Milne for continuous distinguished and devoted service during the evacuation of the Caucasus: Temporary Colonel A. G. Phear, A.M.S. Temporary Captains: G. G. Bruce, (acting Major) A. Dick, J. Elder, (acting Major) J. D. Gunn, and G. B. Wild, of the R.A.M.C. Captains: R. Chevassut, F. B. Jago, G. E. Tilsley, and W. A. Weatherhead, of the R.A.M.C.(S.R.); Captain (acting Major) G. Y. Thomson, I.M.S., and Assistant Surgeon De Noronha, of the I.M.D.

Surgeon Commander D. W. Hewitt, C.M.G., R.N., S.M.O., in charge of medical arrangements on Dwina River, has been mentioned for services in a dispatch, dated January 1st, 1920, from Rear Admiral J. F. E. Green, late senior naval officer, White Sea.

Captain (acting Major) J. M. Weddell, R.A.M.C., has been mentioned for valuable services in connexion with the military operations in Kurdistan and Persia.

Medical News.

MR. ARTHUR EVANS, surgeon to the Westminster Hospital, will open a discussion on alcohol and alcoholism in relation to venereal disease, at a meeting of the Society for the Study of Inebriety, 11, Chandos Street, W., on Tuesday, July 13th, at 4 p.m.

The Section of the Study of Disease in Children of the Royal Society of Medicine will hold a meeting at Manchester on June 18th and 19th. The time of the meeting will be chiefly given up to visits to hospitals and medical, surgical, and pathological demonstrations, but papers will be read on Friday afternoon, June 18th. On Saturday visits will be paid to the Children's Hospital, Pendlebury, the Swinton Schools for Crippled Children, the Sandlebridge Colony for the Feeble-minded, the Soss Moss Schools for Epileptic Children, and the Schools for the Deaf, Old Trafford.

THE National Council for Combating Venereal Diseases will hold its fifth annual meeting on June 7th, at the Royal Society of Medicine, 1, Wimpole Street, W.1, at 5 p.m. The meeting will be addressed by the Right. Hon. Viscount Astor, Parliamentary Secretary to the Ministry of Health.

THE King of the Belgians has awarded the Médaille du Roi Albert to Dr. A. C. Magian of Manchester, who had previously received the Médaille de la Reconnaissance Française in silver and the Associate's medal of the Order of St. John of Jerusalem, for services rendered to the Allies during the war. Last year the Belgian community in Manchester gave him a testimonial, and he has received a presentation from medical colleagues associated with the Manchester French Hospital, of which he is founder and honorary director.

A COURSE of twelve practical demonstrations on the management and feeding of infants and young children will be given by Dr. Eric Pritchard at the St. Marylebone Dispensary, 77, Welbeck Street, W.1, on Tuesdays and Thursdays at 10.30 a.m. and 3 p.m. respectively, commencing on June 1st. The fee for the course is 2 guineas.

AT the annual general meeting of the Society for Relief of Widows and Orphans of Medical Men, when Sir Alfred Pearce Gould was in the chair, Sir Malcolm Morris and Dr. Needham were elected vice-presidents, and eight new directors were chosen to fill vacancies in the court. Since the last report nineteen new members have been elected and fifteen have been lost by death or resignation. The society consists at present of 1 honorary, 160 life, and 135 ordinary members. The total number of members has remained practically stationary during the past twenty-five years. The invested capital has increased from £95,700 in 1895 to £144,250 in 1920, owing mainly to a large legacy received from the late Mr. Brickwell. The annual grants have increased from £3,280 to £4,937. The total income in 1920 was £4,927 and the working expenses £285. At the present time the widow of any member who has an income of £100 a year or under receives a grant of, on the average, £50 a year, and each orphan £43 a year up to the age of 16. Grants, however, can be paid from special funds to orphans over the age of 16 and to widows. Membership of the society is open to any registered medical practitioner who, at the time of his election, is resident within a radius of twenty miles of Charing Cross; the annual subscription for a member under 40 years of age at the time of his election is 2 guineas.

THE Chinese Red Cross Society, founded in 1904, has now 26,000 members and 30 district committees.

THE Mexican Board of Health has decided to place in quarantine all ships coming from Havana, where there is an epidemic of meningitis.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

TREATMENT OF PSORIASIS.

DR. J. ALDREN WRIGHT (Cambridge) writes, in reply to "F. B. E.": I have given a course of "606" substitutes to several patients suffering at the same time from syphilis and psoriasis—without any apparent effect on the psoriasis.

DR. LEONARD J. KIDD (London, N.W.3) refers "F. B. E." to a paper by Léopold-Lévi in the *Comptes Rendus de la Société de Biologie*, 1913, lxxiv, p. 1156, on the value of testis powder (0.20 gram in a cachet daily) in severe pruriginous psoriasis. Brisson found that the testis is rich in sulphur and has a marked action on the skin. Long ago Brown-Séquard found that testicular extract was as active therapeutically in women as in men.

INCOME TAX.

R. J. F. inquires as to the limit of income above which allowances for wife and children cease.

*** Under the proposals of the Finance Bill for 1920 there is no limit, the allowances in question being extended to everybody, irrespective of the amount of their incomes. The forms now being issued by the Revenue authorities were no doubt printed some months ago. We advise our correspondent to complete the declarations in respect of wife and children, on page 4 of the form, disregarding the stated limit of £800—it will presumably avoid the necessity which he would otherwise be under of making supplementary claims later in the year.

W. O. W. disposed of his panel practice on December 31st, 1919, retaining a small amount of private practice and a life assurance examinership. What is his position as regards the years 1919-20 and 1920-21?

*** In our opinion W. O. W. is entitled to treat his panel practice as a separable section or branch of his practice, and as from December 31st, 1919, to exclude from the average on which he is chargeable the profits—not, of course, the gross receipts—derived therefrom. His successor in that practice stands in the converse position. We suggest that he makes his return for 1920-21 on that basis, stating the facts, and that he requests the local inspector of taxes to adjust the tax for the last quarter of 1919-20 accordingly. The claim for an income falling by 10 per cent. can be made for 1919-20, but that cannot be depended on for 1920-21.

V. V. V. feels that he has grounds of complaint as to the degree of care exercised in the office of the local inspector of taxes with regard to confidential returns. He is assessed by the Special Commissioners, and since an error on the part of the inspector's staff was pointed out he has been continually requested for details of income and expenditure. What is his best course of action?

*** We are inclined to suggest that perhaps some personal conversation with the inspector might result in an amicable settlement of the matter, but we realize that our correspondent may reasonably feel disinclined to adopt that course. Returns for assessment by the Special Commissioners properly pass through the inspector's hands; in fact, the form contains a direction to send it to him in the first place, but the responsibility for the assessment rests with the Commissioners themselves. V. V. V. would be adopting a correct legal course in appealing to them, and attending their appeal meeting with his books when requested to do so.

LETTERS, NOTES, ETC.

MODE OF QUININE ADMINISTRATION.

WE have had a number of further letters on this subject, from which we print the following extracts:

Dr. R. VAN SOMEREN (Muswell Hill) writes: After fifteen years' tropical experience in various parts of Uganda I am convinced that it is not wise to dogmatize about the best methods of administering quinine and its correct dosage—so widely do the common clinical manifestations of malaria vary in different regions. In one station, where the subtertian cases were mild, and not usually accompanied by vomiting, I used the oral method; sixty miles away severe vomiting was frequent, and there I used nothing but intramuscular or intravenous injections. So great was the relief that the patients used to beg for them. After the attack I gave gr. v of the bihydrochlorate night and morning for a fortnight, then at night for a fortnight, then every other night for a fortnight, and then every Sunday for six weeks. My assistants and I never found that injections were followed by necrosis, the occurrence of which I attribute to faulty technique. Quinine injections did not aggravate haemoglobinuria in blackwater fever.

Dr. S. SOLIS COHEN (Philadelphia) writes: Since 1884 I have used quinine and urea hydrochloride, given intravenously, for the treatment of malaria and pneumonia. Although necrosis and sloughing occurred in a few of the earlier cases we soon learned how to avoid it; since then, although in about 4 cases in 1,000 one does meet with slight mishaps (ranging from persistent induration to superficial or even deep ulceration) serious accidents have never been seen. For oral administration the best salt to use is the dihydrobromide; for intravenous use the dihydrobromide, the dihydrochloride, or quinine and urea hydrochloride (1 to 10 per cent. in physiological saline solution). For intramuscular injection quinine and urea hydrochloride is preferable on account of its greater solubility.

Dr. W. M. HEWETSON (Sinoia, South Rhodesia) writes: The fundamental difference between the administration of quinine by the mouth or rectum on the one hand and intravenously or intramuscularly on the other, is that in the former case the quinine must pass through the portal system before reaching the systemic circulation, whereas in the latter method the systemic circulation is reached directly. In malarial attacks the spleen is acutely affected, and I have seen its lower margin descend two inches in sixteen hours as a consequence of an attack. In the liver chronic changes are known to occur, and severe bilious vomiting and stoppage of digestive function are characteristic of acute attacks. The acute stages of malaria show that there is much disturbance of the liver and spleen. If muscular tissue undergoes necrosis from contact with quinine may not damage occur from the action of the latter on the delicate liver cells? I have always found intramuscular injection to be very powerfully effective—more so than oral administration. I have found among the laity a general desire for, and belief in, intramuscular injections. I have never had an abscess after intramuscular injection.

DICKENS ON THE TREATMENT OF MALARIA.

DR. J. H. ELMES (Lusikisiki, Pondoland) writes: With reference to Dr. Robertson's and Major Law's letters of February 7th and 21st, on the treatment of malaria, it is curious to note that in a review of *The Narrative of the Expedition to the Niger in 1841*, written by Charles Dickens in 1848, the following passage occurs: "It appears to yield to calomel in the first instance and strong doses of quinine afterwards more than to any other remedies." History repeats itself.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 34, 35, and 36.

THE following appointments of certifying factory surgeons are vacant: Frome (Somerset), Garstang (Lancaster), Redditch (Worcester), Tooting (London), Uttoxeter (Derby and Stafford).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.